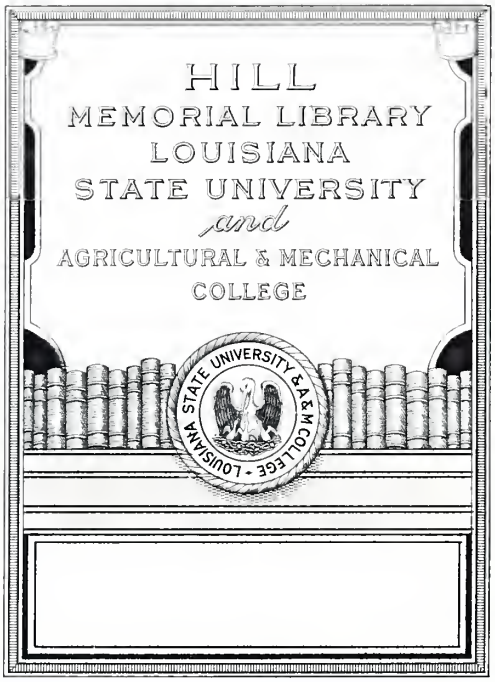
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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against foreign Competition

Vol. 22 NEW ORLEANS, LA., OCTOBER 1, 1943 No. 1

Annual Address of President Wallace C. Kemper

The past 24 months have been part of the intensive activity of War Years. As I look back, it seems impossible that so many changes and developments could have occurred in connection with the sugar industry, within so short a space of time. Maybe it just seemed startling to me because I felt the responsibility of the Presidency so keenly.

Even before war was declared by the U.S.A., industry had to face emergency regulations regarding priorities on scarce materials. The sugar industry was the first to feel the effect of price control by the establishment of a raw sugar ceiling in August, 1941. Later sugar was to become the first rationed food. When, five months after the declaration of war, sugar quotas were suspended, Louisiana had already planted its 1942 crop. Nevertheless Louisiana produced a 400,000-ton sugar crop. The rationing and zoning of sugar came as emergency developments, resulting directly from ship sinkings along the Atlantic Coast which jeopardized the possibility of ocean transportation almost completely. After so many years of warning by the American Sugar Cane League and by other organizations representing the continental producers of sugar,—warnings resisted by free-traders and internationalistic-minded bureaucrats—we saw the very alarming demonstration of how dependent the American consumer can become upon sugar produced in the mainland. The rationing of sugar was considered drastic by most consumers, but if it had not been for continental sugars, the shortage would have been so severe as to cut the supplies to the pitiful level of European ration units.

The dislocations of transportation brought the problems of ODT control over rail and truck shipments. The gasoline and rubber shortages curtailed passenger as well as freight movements. The zoning of the United States for sugar distribution at first provided for and directed the delivery of continentally produced sugar in practically every State of the Union, excepting those sections nearby to the Eastern Seaboard ports. The first map of the sugar zones should be filed alongside the zone maps of World War I, so that in the future when the program planners may try to minimize the importance of the continental sugar industry, they can be confronted with this additional visual testimony as the best evidence of service and performance by mainland producers.

The labor shortages which followed the drafting of all able-bodied young men and the rapid expansion of shipyard and other war plants, created the greatest continuing problem the industry has had to face. As a matter of fact, this problem is the only one which has become aggravated despite all of our efforts; by comparison, the League has been very successful in meeting other difficulties.

As a culmination of four months' continuous work, it can be announced with great pleasure that seven sub-camps in the sugar district have been approved for 2,550 prisoners of war. Six additional sub-camp locations have been submitted and we hope they will be approved. There is no limit on the number of prisoners to be allowed for agricultural work, but there is a limit on the available sites that will conform to the requirements of the Eighth Service Command and the War Manpower Commission. This could not have been accomplished had our League members become discouraged over early refusals. Specifically, Charlie Farwell, Frank Barker and his Labor Committee and the entire Extension Division deserve unlimited praise for this accomplishment.

THE
SUGAR BULLETIN
414 Whitney Bldg., New Orleans 12
Marcel J. Voorhies, Editor
Issued on the 1st and 15th of each month. Official Organ of the American Sugar Cane League of the U. S. A.
in which are consolidated
The Louisiana Sugar Planters' Assn.
The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
Subscription Price, 50 Cents per Year.

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The value of the American Sugar Cane League to its members has been so thoroughly demonstrated during these War Years that I feel every member owes a personal debt of gratitude, at least, to the employees of the League, particularly and to the willing committee members and chairmen who have served you so continuously and so well.

At the beginning of this year, the Executive Committee adopted a seven-point program for the League, based upon experience and anticipation. Every one of those seven points has been pursued diligently and in most cases successfully.

First. We have enjoyed a reduction in the number of questionnaires from Washington, and almost counterbalanced our gain by sending our additional questionnaires from the League office!

Second. We have succeeded in persuading Washington to give us their regulations prior to their effective date, so we do not have to face the difficulty of retroactive determinations. We hope we can be equally successful in having the support payment program in effect by the beginning of our harvest. It has taken constant and vigorous pressure and as a matter of effort the League's officials have made their greatest contribution of time and energy to bringing about the announcement of Government determinations in advance of their application.

Third. The difficulties in getting containers for raw sugar having been caused by the action of the United States Government permitting Cubans to compel the return of their used bags, the League appears to have been successful in bringing about relief, with the cooperative assistance of Government agencies, so that there is good prospect of having available all bags needed to market our raw sugar crop.

Fourth. On farm machinery the League, with other farm organizations, went to bat to get more steel and other critical materials allocated to the manufacturers of farm implements. The job that was done in securing steel and rubber for cane harvesters amounts to almost having accomplished the impossible. The fact is that the manufacturers of cane harvesters have practically worked to capacity this year, with the result that there will be more than 200 mechanical harvesters operating on the 1943 crop. Dusting machines for insect eradication were originally allocated only to cotton farmers, but by being alert to the situation, the League obtained a fair share for its cane growers. We now have last minute advices that an extra supply of truck tires is now being made available for our cane hauling.

Fifth. The work done by our organization in obtaining fertilizer is perhaps the outstanding example of service performed by an agricultural organization for its members. Individual farmers had very little hope on fertilizer, under the conditions that existed in the Spring of 1943. It took a united organized effort, and while fertilizer deliveries were late in each year, they were ample finally to fill the requirements of our members. The League is making the most of its experience in previous years on fertilizer, and arrangements are already being made for deliveries of nitrogenous fertilizers for the 1944 crop in such volume as we believe will satisfy the wants of every sugarcane grower in Louisiana. We have been running into difficulties and changing regulations from Washington, nevertheless we have confidence in finally getting all the nitrogen we need. Cane growers can cooperate greatly by placing their orders immediately for fertilizer and by agreeing to accept early delivery.

Sixth. The labor shortage continues to be our big problem. The League has been working overtime to provide ways and means of meeting the labor crisis, and while we are investigating all possible sources there remains work to be done to find the extra laborers needed to harvest a big crop. The Louisiana Agricultural Extension Division and the County Agents have been cooperating wholeheartedly with the League trying to recruit labor, principally from the cotton and rice producing areas. Contacts have been maintained with the Army, seeking to obtain the services of prisoners of war, despite the fact that we are unfortunately within the 150-mile zone along the Gulf Coast where prisoner camps were previously prohibited from being established. The outlook is that some arrangement may be possible whereby a small number of prisoners may be employed. The Army has also been requested to consider the labor shortage as an emergency which would justify the granting of furloughs to soldiers on duty in army camps; preferably soldiers who have had farm experience and would volunteer to cut cane. Conferences have been held with the War Manpower Commission and the Labor Division of the War Food Administration to work out plans for bringing industrial laborers and even foreign laborers to assist with our harvesting operations. The State Government has cooperated to reassure persons on relief that they would be restored to the relief rolls, after the grinding

season is over. In the course of this year the Wage and Hour Division has established a minimum wage rate of $.40 per hour for factory workers and the Sugar Branch established a minimum wage of $.30 per hour for agricultural workers. By urging the WFA to issue early the annual minimum wage determination for sugarcane workers, we now have this information sufficienlty in advance to enter into labor contracts based upon specified wages. Of greatest help has been the obtaining of price assistance from the WFA so that sugarcane growers could afford to meet the increased wage rates made necessary because of the abnormal competition of war plants for common laborers.

Seventh. Costs of production have been increasing progressively since the war emergency began. The increases in our wage rates are but indications of a general trend. Notwithstanding that our costs have gone up at an abnormally rapid rate, the price of sugar has been kept down at the same ceiling since January, 1942. It became evident early this year that the grower would have to have a higher price for his sugarcane, or else the Government would have to provide some support program. Support programs had been inaugurated previously by the Government for assisting the beet growers on their 1943 crop, and for absorbing freight and insurance charges to assist cane refiners in receiving raw sugar, and beet processors in distributing their sugar outside the normal marketing zones. In view of the "Hold-the-Line" order of the President, we were assured that there was no chance to get the price of sugar raised, so the League directed its efforts toward obtaining a support program from the War Food Administration. It is interesting to note, parenthetically, that the United Kingdom has just increased the retail price of sugar in the British Isles from 6¢ per pound to 8¢ per pound. Without attempting to detail the objections and setbacks we encountered along the way, the League refused to accept defeat, and finally presented, through our Vice-President, Mr. J. J. Shaffer, Jr., a powerful written and personal appeal for price assistance on the 1943 crop and a commitment on the 1944 crop before planting began. The success of this movement was expressed in an announcement by WFA offering to growers 33¢ per ton on all cane harvested in 1943, such payment to be made by the Commodity Credit Corporation, acting through the processors. We assume that this support payment will be received by growers from processors as disbursing agents for CCC, at the time of the weekly and seasonal settlements for sugarcane, so that there will be no waiting for 6 to 8 months as has been the case with benefit payments. On the 1944 crop, price assistance amounting to 83¢ per ton will be paid to the growers, in the same manner as on the 1943 crop. These encouragements have stimulated sugarcane growers to a realization that the United States Government must want sugar to be produced in Louisiana. I urge upon sugarcane growers, therefore, to plant a maximum acreage in response to the appeal of the War Food Administration and in appreciation of the price assistance offered.

It is well for Louisiana producers of sugarcane and sugar to keep in mind how great have been the changes in the relations of the sugar industry with the Federal Government. For more than a century the sugar industry was developed under a tariff protection policy. For a very brief period in the 1890's the sugar bounty was tried, but discarded. Later the insular policy brought about a situation where the tariff was nullified to a great extent by the admission of sugar free-of-duty from the islands and on a preferential basis from Cuba. The Federal policy was changed in 1934 to quotas and partial tariff protection. The quota system has the recognized advantage of definitely limiting the amount of sugar that can be imported, rather than leaving it entirely to the competitive effect of tariff. When the war came the quotas were suspended and there was inaugurated a rationing and zoning system to supplement the price ceilings. Emergency conditions have made it necessary for price assistance to be offered by the War Food Administration in order to make it possible for the industry to meet the increased costs of production, without raising the price of sugar to the consumer.

Continental producers have consistently pleaded with the Federal Government for the recognition of sugar production with the States of the United States as an "insurance policy" for the consumer during war times, to give protection against supply shortages and price increases. The Louisiana production record of 1942 was exactly 400,000 tons and the prospects for 1943 point to a potential increase, provided we make an all-out effort and are blessed with favorable weather conditions. So far, Louisiana's war record in sugar production is very good. We can, and we should make it better. With a progressively good war record the position of the Louisiana sugar industry will be more likely to receive the consideration it deserves in the post-war planning which is already going on and which will become a major activity when Peace is finally declared.

The membership of the American Sugarcane League represents the overwhelming majority of sugarcane producers in Louisiana. At the present time we have a paid-up membership of approximately 11,000. It is very pleasing to be able to declare that all processors in Louisiana are participating members of the League and are co-operating in the work of our organization for the benefit of their growers as well as themselves. A large membership means that there is an appreciation within the industry of the work which is being done for the good of all. This is a wholesome condition and as long as it prevails, the future of the League and the future of the industry will mutually and jointly be assured.

In these days of deficit financing, it is unusual for a President to report that expenditures were less than receipts. For that reason I am particularly glad to announce that the League's cash balance is approximately $17,000.00 greater today than it was the day I took office. Credit, of course, is due our Treasurer and our Finance Committee chairman.

Gratitude is one of the most notable of all human qualities. Unfortunately, gratitude which is felt is not always expressed. There was an occasion this year when the American Sugarcane League gave public expression of its gratitude to men who have made outstanding contribution to the welfare and progress of the industry. Four leaders of the industry itself were given honorary memberships and they are well deserved. Honorary memberships were also given to three gentlemen who had performed "beyond the call of duty" in their service to the sugarcane growers. It was a proud moment for the League when these men could be given a public testimonial of recognition and gratitude. It demonstrated impressively that the American Sugarcane League is the heart of the Louisiana sugar industry. It showed,

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above all, that while we have the reputation of being fairly tough in our criticism of acts and policies which seem unfair, the League is generous and expressive in its praise for services rendered.

I have thoroughly enjoyed my two years as your President. The work involved was more demanding than I had expected when elected. If our organization's activities were handled in a satisfactory manner during those two years, the credit goes to the employees of the League, all of whom are completely efficient, able, willing and competent. I assure you the incoming President need not worry over his new responsibilities as long as we retain such a perfect staff. I cannot commend them too highly.

Before I step down to the quiet and relaxing anonymity of an ex-presidnet, I assure our new President and our other officers, my unqualified cooperation throughout their term of office.

New Administration Elected

The following officers and members of the Executive Committee were elected by the members of the American Sugar Cane League of the U. S. A., Inc., at the 21st Annual Meeting held in the Jackson Room of the St. Charles Hotel in New Orleans on Thursday, September 30th, 1943.

President	J. J. Shaffer, Jr.
1st Vice-President	George L. Billeaud
2nd Vice-President	Dubourg Thibaut
3rd Vice-President	J. J. Munson
4th Vice-President	C. J. Bourg
5th Vice-President and General Manager	Marcel J. Voorhies
Manager Emeritus	Reginald Dykers
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Warren Harang	E. N. Kearny
H. Langdon Laws	George M. Murrell
F. A. Graugnard, Jr.	Louis Robichaux
Charles A. Farwell	L. A. Borne

Official Release

(Increase of 10% in edible molasses and syrup quotas)

The War Food Administration has announced an increase of 10 per cent in the edible molasses and syrup quotas of blenders and food manufacturers during the marketing year ending September 30, 1944.

This upward revision in quotas, which becomes effective October 1, through Amendment 1 to FDO 51, has been made possible by the expected increase in the production of cane syrup and Louisiana molasses. It is anticipated that the increased allowances will enable blenders to increase their deliveries to new customers, WFA said.

The quotas, which are applicable to blenders and food manufacturers who obtain their supplies directly from producers, will be raised from 100 to 110 per cent of the quantity used during the year ended June 30, 1941. There are no quotas on blended molasses, but because of the limited supplies of edible molasses and syrup available to blenders, the latter have been obliged to limit deliveries of the blended product to their customers.

* * * * *

CHAPTER XI—WAR FOOD ADMINISTRATION
(DISTRIBUTION ORDERS)
Part 1490—Miscellaneous Food Products
FDO 51, Amendment 1

Restrictions on the Use and Delivery of Edible Molasses

Food Distribution Order No. 51, 1490.5, issued by the Administrator, Food Production and Distribution Administration, on April 24, 1943, is amended as follows:

1. By deleting the provisions in (b) (1) thereof and inserting, in lieu thereof, the following:

(1) Unless specifically authorized by the Director, no blender or food manufacturer shall accept delivery of edible molasses during any marketing year in excess of 110 per cent of a yearly supply.

ADVICE WITH RESPECT TO SPRING PLANTING OF WINDROWED SUGARCANE

We believe that the reaction of the varieties of cane to spring planting is closely allied to the reaction of these varieties to Red Rot, and while we have no actual experience at Baton Rouge on spring plantings we find from the dates of planting work that C.P. 29-16, C.P. 29-120 and Co. 281 are consistently high yielding canes when planted on November 15. These are three of the most resistant varieties to Red Rot.

The ideal time to windrow is immediately following a light freeze when the cane is still wet.

W. G. Taggart

2. By deleting the provisions in (b) (3) thereof and inserting, in lieu thereof, the following:

(3) Every blender or food manufacturer, before accepting delivery of edible molasses shall deliver (in duplicate) to his supplier a certificate in substantially the following form properly filled out and manually signed by a duly authorized official:

The undersigned hereby certifies to the Food Distribution Administration, War Food Administration, and his supplier that the delivery to him of ..... gallons of edible molasses of the following:..... ....., in the marketing
(refiners' sirup, blackstrap, etc.)
year ending on September 30, 194...., in connection with which this certificate is furnished, will not, taking into consideration edible molasses received or to be received by the undersigned, during said marketing year, from all sources, be in excess of 110% of a yearly supply to which the undersigned as a ..... is entitled under
(blender or food manufacturer)
the terms of Food Distribution Order No. 51, as amended, with which the undersigned is familiar.

.....
Name of deliveree

By.....
Duly authorized official

.....
Date

With respect to violations of said Food Distribution Order No. 51, rights accrued, or liabilities incurred

prior to the effective date of this amendment, said Food Distribution Order No. 51 shall be deemed to be in full force and effect for the purpose of sustaining any proper suit, action, or other proceeding with respect to any such violation, right, or liability.

This amendment shall become effective on October 1, 1943, at 12:01 AM E.W.T.

ISSUED THIS 16th DAY OF SEPTEMBER 1943.

MARVIN JONES,
War Food Administrator

Properties of Ammonium Nitrate that Affect Its Use as a Fertilizer

Wm. H. Ross, J. Richard Adams, John O. Hardesty and J. Y. Yee, Division of Soil and Fertilizer Investigations
Bureau of Plant Industry, Soils and Agriculture Engineering, U. S. Department of Agriculture, Beltsville, Maryland

Ammonium nitrate has been used as a fertilizer in this country for the past 20 years. During this period it was not used as such, but in association with other materials to form products that have been sold under such trade names as Nitrogen Solution and Calnitro. The first product is used only in mixed fertilizers; the second is used as a component of mixed fertilizer as well as a top-dressing.

The most commonly used nitrogen carriers are ammonium sulfate and nitrate of soda. The exigencies of the war have caused a deficiency of these two standard fertilizer materials and created at the same time an excess production of ammonium nitrate. The War Production Board has, therefore, arranged with the Tennessee Valley Authority and other producers for the manufacture of a large tonnage of ammonium nitrate fertilizer. This new production will supplement established supplies so that American farmers will have some 100,000 to 200,000 tons more nitrogen for fertilizer use than in any previous year. These new developments in the fertilizer situation are likely to result in a greatly increased consumption of ammonium nitrate in mixed fertilizers as well as for use as a side-dressing.

Untreated ammonium nitrate has certain disadvantages which seriously interfere with its use as a fertilizer. These are its marked tendency to cake, and its high hygroscopicity, or tendency to absorb moisture from the air in humid weather.

Caking of Ammonium Nitrate

The caking of ammonium nitrate increases with the fineness of its particles, with increase in the temperature and the pressure to which it is subjected in storage; with the duration of storage; and with its moisture content. Ammonium nitrate stored only a few bags deep in the winter time will not cake as readily as will the same material stored to a greater height during the hot months of the summer. However, numerous laboratory tests and observations in different parts of the country indicate that untreated ammonium nitrate in any form cannot be stored at any point in the Gulf States without danger of serious caking in the bags in which the material is stored.

The tendency of ammonium nitrate to cake can be greatly reduced by coating it with a few per cent by weight of a very finely-divided water-insoluble material such as colloidal phosphate, kaolin or other clay-like material, and kieselguhr. Materials such as limestone and dolomite which react with ammonium nitrate do not make good conditioning agents. A colloidal phosphate that contains any limestone should not be used as a conditioning agent. The conditioning agent can be conveniently added to the ammonium nitrate while it is being rolled in a drum or rotary drier.

Hyproscopicity of Ammonium Nitrate

The second property of ammonium nitrate that seriously interferes with its use as a fertilizer is its tendency to become sticky as a result of moisture absorption from the air in humid areas. This condition greatly interferes with the uniformity with which ammonium nitrate can be distributed in the field. In arid and semi-arid sections of the country, ammonium nitrate is not likely to absorb any considerable amount of moisture. In other sections it will absorb moisture on humid days in the summer time but not during the winter months. In the Sugar Bowl of Louisiana it will absorb moisture from the air every month in the year under normal conditions. It is, therefore, not practical to use untreated ammonium nitrate as a top-dressing in this section of the country during any season of the year.

The rate at which ammonium nitrate absorbs moisture from humid air can be greatly reduced by coating it with a small quantity of a water-repellent material such as petrolatum, paraffin, wax or rosin used singly or in combination. This coating can be most conveniently applied by spraying the molten material on hot ammonium nitrate while it is being rolled or agitated in a grainer or rotary drier.

Coating ammonium nitrate with a finely-divided water-insoluble material such as kaolin or kieselguhr does not reduce its tendency to absorb moisture; neither does a coating with a water-repellent material such as petrolatum or paraffin reduce its tendency to cake. If moisture absorption as well as caking is to be reduced, it is necessary to coat ammonium nitrate first with a water-repellent material and then with a finely-divided water-insoluble material. The ammonium nitrate should preferably be cooled to normal temperature before receiving the second coat.

If the first coat should approximate 1 per cent of the ammonium nitrate and the second 4 per cent, the nitrogen content of the treated product will then amount to about 32.5 per cent, or double that in nitrate of soda.

Coating ammonium nitrate with a maximum of 1 per cent of a water-repellent material will not completely eliminate moisture absorption and is intended only to prevent the ammonium nitrate from becoming undrillable during the time that it is being distributed in the field. Absorption of moisture during shipping and storage can be most effectively prevented by packaging the material in moisture-proof bags such as are now in general use in the fertilizer industry. Coating and conditioning ammonium nitrate will likewise exhibit only a temporary effect in reducing its solution in the soil, A water-repellent material such as paraffin is readily decomposed by soil bacteria, and the initial protection it afforded the ammonium nitrate is, therefore, soon lost after being incorporated in the soil. The Tennessee Valley Authority is now producing grained ammonium nitrate that is conditioned with a water-repellent material and an anti-caking agent. Production of the improved material started about the middle of July. Shipments received by this Division have been in excellent condition and have remained in good condition during storage to date. Similar reports have been received from several fertilizer manufacturers.

The Tennessee Valley Authority ammonium nitrate does not absorb moisture from the air as readily as untreated ammonium nitrate, but more readily than sodium nitrate. It is probable the material will be further improved in this respect.

Ammonium Nitrate in Mixed Fertilizer

Ammonium nitrate has been added to mixed fertilizer for a number of years in the form of Nitrogen Solution. This is an ammoniating liquor and the quantity of ammonium nitrate that can be added in this way is limited by the free ammonia in the solution. Attempts are now being made to increase the ammonium nitrate in mixtures by adding it in the solid state.

Numerous tests made in the Division of Soil and Fertilizer Investigations, U. S. Department of Agriculture, indicate that the quantity of ammonium nitrate that can be added to a mixed fertilizer without seriously impairing its mechanical condition depends on the nature of the other materials with which it is associated in the mixture. A larger quantity of ammonium nitrate, for example, can be safely used in an ammoniated mixture than in one that is not ammoniated.

It has also been observed that the hygroscopicity of mixed fertilizers containing ammonium nitrate varies greatly with the potash carrier used in the mixture. Those containing potassium sulfate are the least hygroscopic, and those containing manure salts are the most hygroscopic. This means that more ammonium nitrate may be added to a mixture containing potassium sulfate than to a corresponding mixture in which the potash is present as manure salts.

Ammonium nitrate is somewhat more hygroscopic than nitrate of soda but it contains more than twice as much nitrogen. Less than half as much is therefore required to supply the same quantity of nitrogen. The replacement of nitrate of soda in a mixture with the equivalent quantity of ammonium nitrate will therefore in some cases actually decrease rather than increase its rate of moisture absorption.

Summary and Conclusions

Ammonium nitrate is now available in relatively large quantities for use as a fertilizer and its consumption during the coming year is likely to exceed that of any previous year. Its tendency to cake and to absorb moisture from the air exceeds that of any other fertilizer material now on the market. Its tendency in this respect in hot humid sections of the country, such as the Sugar Bowl of Louisiana, is so marked that the untreated material as such is not recommended for use as a fertilizer.

It is possible, however, to reduce greatly the tendency of ammonium nitrate to absorb moisture and cake by coating it with about 1 per cent of a mixture of petrolatum and wax or rosin followed by a second coating of 4 per cent of kaolin or kieselguhr. Tests so far made indicate that the material so treated can be used in the Sugar Bowl of Louisiana provided it is shipped and stored in standard moisture-proof fertilizer bags, and used within a short time after the bags are opened. It is recommended that any material remaining in the distributing machines be discharged at the close of each day. Bags containing ammonium nitrate should not be allowed to rest on damp floors during storage, and the bags should preferably not be piled more than 5 or 6 high during hot weather.

Papers read at meeting of Louisiana Sugarcane Technologist Association of Houma, La., September 1, 1943.

Official Release

(Maximum Prices for Blackstrap)

The method by which sellers determine maximum prices for less-than-tank carlots sales of cane blackstrap and beet sugar final molasses produced in the United States was revised on August 2, 1943 by the Office of Price Administration.

Price control of these commodities originally was established under the General Maximum Price Regulation—with maximum prices at March 1942 "highs". Later, a specific schedule with maximum prices was set up under Supplementary Regulation No. 14 to the General Maximum Price Regulation, by which the seller was allowed to sell at the higher of either the March 1942 price or that established in the schedule. It was also provided that, where he used the March 1942 price on tank carlot sales, he *must* use the March 1942 price on less-than-tank carlot sales.

This proviso has tended to prevent distributors from making both types of sales on a satisfactory basis.

The new action, taken through Amendment No. 9 to Supplementary Regulation No. 14, enables distributors to make tank carlot sales at the March 1942 price and, at the same time, make less-than-tank carlot sales under the specific schedule in Supplementary Regulation No. 14. The amendment became effective August 7, 1943.

(Document No. 19532)

PART 1499—COMMODITIES AND SERVICES
[Rev. SR 14 to GMPR, Amdt. 9]

CANE BLACKSTRAP MOLASSES AND BEET SUGAR FINAL MOLASSES

A statement of the considerations involved in the issuance of this amendment, issued simultaneously herewith, has been filed with the Division of the Federal Register.*

Revised Supplementary Regulation No. 14 is amended in the following respect:

1. The text of section 1.6 (a) preceding subparagraph (1) is amended to read as follows:

(a) *Maximum prices.* The maximum prices for sales of cane blackstrap molasses and beet sugar final molasses produced in the continental United States by producers thereof and by distributors other than those exempted in paragraph (b) shall be the applicable maximum prices set forth in this paragraph (a), or the seller's maximum price as determined under § 1499.2 of the General Maximum Price Regulation, whichever is higher. Sellers pricing their tank carlot sales of a type of molasses under § 1499.2 of the General Maximum Price Regulation are not precluded from pricing their less than tank carlot sales of that type of molasses under subparagraph (2) below.

This amendment shall become effective August 7, 1943.

(Pub. Laws 421 and 729, 77th Cong., E.O. 9250, 7 F.R. 7871, E.O. 9328, 8 F.R. 4681)

Issued this 2d day of August 1943.

PRENTISS M. BROWN,
Administrator.

*Copies may be obtained from the Office of Price Administration.

Official Release

Entries of Sugar from Offshore Areas through August 31, 1943

The quantity of sugar entered for consumption from all offshore areas during January-August amounted to 3,253,980 short tons, raw value. For the corresponding period last year the quantity entered totalled 2,512,526 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 182,581 short tons of sugar, raw value, was marketed by the mainland cane area and 954,657 tons by the continental beet area during January-July, 1943 as compared with 139,846 tons and 840,751 tons, respectively, during the same period of 1942.

Area	Quantity entered through August 31 (short tons—96° equivalent)
Cuba	2,133,344
Philippines	0
Puerto Rico	438,049
Hawaii	605,996
Virgin Islands	3,004
Foreign Countries other than Cuba	73.587
Total	3,253,980

Direct-Consumption Sugar

Direct-consumption sugar is included in the foregoing quantities shown as entered through August 31.

Area	Quantity entered through August 31		
	Sugar Polarizing 99.8° and above (short tons, 96° equivalent)	Sugar Polarizing less than 99.8°	Total
Cuba	263,799	22,496	286,295
Puerto Rico	55,531	6,743	62,274
Hawaii	0	960	960
Total	319,330	30,199	349,529

Entries from Full-Duty Countries

Area	Quantity entered through August 31[1] (pounds)
Australia	17,957,525
Dutch East Indies	6,311,372
Fiji Islands	55,855,901
Martinique	20,907,375
Mexico	41,980,181
New Zealand	155,302
Peru	4,006,731
Total	147,174,387
Tons	73,587

[1]Excluding the first 20,000 pounds entered from each area. Under the quota provisions of the Sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, these deductions continue to be made in order to keep entry figures on a comparable basis with those of previous years.

Official Release

Determination of Sugar Commercially Recoverable from Sugar Beets (Revised)

Pursuant to the provisions of section 302 (a) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Determination of sugar commercially recoverable from sugar beets. The amount of sugar, raw value, commercially recoverable from sugar beets marketed under that type of agreement commonly known as "individual test contract" shall be deemed to be 95 percent of the total sugar in the sugar beets, net weight, at the time of delivery to a processor; and the amount of sugar, raw value, commercially recoverable from sugar beets marketed under any other type of agreement shall be deemed to be 97 percent of the amount of sugar calculated by applying to the net weight of the sugar beets, at the time of delivery to a processor, the average percentage of sugar content in the cossettes of all of the sugar beets included in a common marketing agreement: *Provided, however,* That in all cases the tests used to determine the sugar content are those tests customarily used for such purpose by sugar beet processors.

This determination supersedes, with respect to the 1943 and subsequent crops, the determination entitled "Determination of Sugar Commercially Recoverable from Sugar Beets," issued June 21, 1940.

Issued this 5th day of August 1943.

MARVIN JONES,
War Food Administrator.

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The War Makes Molasses Important Subject

(By C. J. Bourg)

Molasses has become a very live topic. As a raw material for the production of alcohol in war times, molasses has become very important as a source of the manufacture of smokeless powder. This summer, the success of experiments in the manufacture of synthetic rubber created an even greater demand for alcohol. Unfortunately, the use of grain in the production of alcohol has been reduced to a minimum because of the shortage of the supply of corn and other grains. Farmers are inclined to use their grains for feeding. On the other hand, only a relatively small amount of molasses has been imported into the United States due to the critical scarcity of tankers.

A series of conferences, participated in by the War Production Board, the Shipping Administration, and the War Food Administration, recently brought about an announcement that ten tank steamers had been allocated for the transportation of molasses from Cuba and Puerto Rico. It is stated that approximately 300,000,000 gallons of molasses will enter the United States in the next 12 months for use of distilleries on the Gulf Coast and the Atlantic Seaboard. This decision is necessarily based upon the expectation and hope that the successful anti-submarine activities of the U. S. Navy will continue to make the Atlantic Ocean relatively much safer for transportation than had been the case in the first year and a half of war experience.

Reports in trade journals and in newspapers tell of plans in Cuba whereby alcohol distilleries are under construction to increase the capacity from around 30,000,000 gallons a year to an eventual 75,000,000 gallons. According to the Wall Street Journal, the Cubans having found it impossible to send their molasses production to the United States in the form of molasses, are planning to turn the molasses into alcohol, which can be packed in drums or cans and transported on freighters. Perhaps it was this plan which forced a decision for the release of tankers. However, the Cuban Commission, which had come to Washington for the purpose of negotiating the sale of the 1944 crop of molasses, went home several days ago without making any deal. The report is that the Commodity Credit Corporation offered $.06 per gallon, while the Cubans were asking $.13 per gallon. When neither side showed any inclination to yield, the Cubans decided to go home. We do not know all of the facts, but in view of the various developments noted above, it is very evident that the Cubans are now in a very much better position on molasses than previously. Numerous complaints have come from Cuba about the low price at which they sold their sugar, it being claimed that at 2.65¢ per ton f.o.b. Cuba many of the mills will sustain losses. If that be true, it is obvious that the Cubans will have to obtain the best price for molasses if they are to make a success of their 1944 crop of sugarcane. At least the Cubans appear to have the advantage of a prospect that, failing to obtain a sale for molasses, there certainly is a market for alcohol, with reduced difficulties concerning transportation.

All of these facts are of very direct concern to the Louisiana producers who are just beginning a grinding season that should produce at least 25,000,000 gallons of blackstrap. The OPA ceiling of $.18 per gallon still remains in force and while it is no secret that there have been discussions in official circles

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Marcel J. Voorhies, Editor

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regarding the price of molasses, as well as the price of alcohol, there is no official action in immediate prospect regarding a change in the ceiling price. The Committee on Military Affairs of the House of Representatives recently called in officials of several Government agencies concerned with alcohol production and the movement of molasses. They were heard in executive session, but it is evident that the subject is being discussed from all angles. It is only natural that the manufacturers of whiskies and gins are following the situation very closely in view of the fact that they have been out of production for a long time and would very much like to see the situation cleared so that they could get back into the business of replenishing their dwindled stocks of beverages.

Truck Tires

As the opening of the grinding season approached and the sugarcane growers began to outfit their trucks for hauling the sugarcane, it soon became known that the dealers in South Louisiana did not have sufficient truck tires to make deliveries on certificates issued by the local rationing boards. The matter was presented to OPA officials in Washington, who consulted with the Rubber Director. The latest reports are that several thousand additional truck tires have been authorized so that manufacturers now have them rolling down to dealers in Louisiana. It now is a question for the sugarcane growers to obtain the proper certificates and to outfit their trucks so that there will be no delay in the harvesting due to tire trouble.

Fertilizer

The attention of all growers is again directed to the desirability of placing orders for fertilizer early. Allotments of fertilizer have already been made but the League has received the advice of WPB and WFA officials that the Louisiana sugar industry will be more certain of getting their full requirements in fertilizer if they arrange for deliveries in advance of the time of application next Spring. It is our understanding that orders for cyanamid have been placed in very considerable volume, indicating that the sugarcane growers would like to have more cyanamid for the 1944 crop than they have used in previous years. The increased production in ammonium nitrate by the TVA at Muscle Shoals affords an opportunity to get large quantities of this fertilizer provided that the grower is willing to have part of the fertilizer delivered before the end of the year. We have already reported these facts in previous issues of the *Sugar Bulletin* but the matter is so important that we repeat the advice and warning to insure a full supply of fertilizer for the 1944 crop.

Official Release

Determination of Normal Yields of Commercially Recoverable Sugar per acre for Sugar Beets (Revised)

Pursuant to the provisions of section 303 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Determination of normal yields of commercially recoverable sugar per acre for sugar beets.—(a) The normal yield of commercially recoverable sugar per acre for any farm on which sugar beets are planted shall be the amount of sugar obtained by multiplying the normal yield of sugar beets in tons per acre for the farm by the amount of sugar, raw value, determined to be commercially recoverable under section 302 (a) of the Sugar Act of 1937, as amended, from a ton of sugar beets of normal percentage of sugar content for the farm.

(b) For the purpose of this determination:

(1) "Planted" sugar beets shall be deemed to include only sugar beets planted for harvest for the extraction of sugar.

(2) The "normal yield" of sugar beets shall be:

(i) For a farm on which sugar beets were planted in 3 or more of the next preceding 7 years, the simple average of the annual average yields of sugar beets in tons per acre planted on the farm for all of such years in which sugar beets were planted;

(ii) For a farm on which sugar beets were planted in only 1 or 2 of the next preceding 7 years, the number of tons obtained by multiplying the county normal yield of sugar beets by the percentage that the simple average of the yields of sugar beets in tons per acre planted on the farm in such year or years is of the simple average of the county average yields of sugar beets for such year or years, except that the normal yield for such farm shall not be less than 80 percent nor more than 120 percent of the county normal yield; and

(iii) For a farm on which sugar beets were not planted in any of the next preceding 7 years, 90 percent of the county normal yield of sugar beets.

(3) The "county average yield" of sugar beets shall be:

(i) For each of the years 1936-41, inclusive, the yield established, or which could have been established, under the 1942 sugar-beet program; and

(ii) For the year 1942 and any subsequent year, for a county with 10 or more farms with respect to which applications for sugar payments were approved, the weighted average yield in tons per planted acre on such farms in such year, and for a county with less than 10 farms with respect to which applications for sugar payments were approved, the yield per acre established by the State Agricultural Conservation Committee on the basis of the yields per acre for such year in the county and in adjacent counties with similar production conditions.

(4) The "county normal yield" of sugar beets shall be:

(i) For a county for which county average yields are established for 3 or more of the next preceding 7 years on the basis of 10 or more farms, the simple average of all the average yield in tons per acre so established for such county for such years; and

(ii) For a county for which county average yields are established for less than 3 of the next preceding 7 years on the basis of 10 or more farms, the yield established by the State Agricultural Conservation Committee on the basis of the yields per acre for the next preceding 7 years in the county and in adjacent counties with similar production conditions.

(5) The "normal percentage of sugar content" of sugar beets for a farm from which sugar beets were contracted to be marketed under that type of agreement commonly known as an "individual test contract" shall be:

(i) In case sugar beets were so marketed in 3 or more of the next preceding 7 years, the simple average of the annual average percentages of sugar content, at the time of delivery to a processor, of the sugar beets marketed in all of such years in which sugar beets were so marketed;

(ii) In case sugar beets were so marketed in only 1 or 2 of the next preceding 7 years, the percentage of sugar content obtained by multiplying the county normal percentage of sugar content of sugar beets by the percentage that the simple average of the average percentages of sugar content, at the time of delivery to a processor, of the sugar beets marketed in such year or years is of the simple average of the county average percentages of sugar content of sugar beets for such year or years; and

(iii) In case sugar beets were not so marketed, in any of the next preceding 7 years, the county normal percentage of sugar content of sugar beets.

(6) The "county average percentage of sugar content" of sugar beets shall be:

(i) For each of the years 1936-41, inclusive, the percentage established, or which could have been established, under the 1942 sugar beet program; and

(ii) For the year 1942 and any subsequent year, for a county with 10 or more farms with respect to which applications for sugar payments were approved, the weighted average percentage of sugar content, at the time of delivery to a processor, of all sugar beets marketed under individual test contracts in such year from farms in the county, and for a county with less than 10 farms with respect to which applications for sugar payments were approved, the percentage established by the State Agricultural Conservation Committee on the basis of the percentage of sugar content, at the time of delivery to a processor, of the sugar beets so marketed in such year from farms in the county and in adjacent counties.

(7) The "county normal percentage of sugar content" of sugar beets shall be:

(i) For a county for which county average percentages are established for 3 or more of the next preceding 7 years on the basis of 10 or more farms, the simple average of all the average percentages so established for the county for such years; and

(ii) For a county for which county percentages are established for less than 3 of the next preceding 7 years on the basis of 10 or more farms, the percentage established by the State Agricultural Conservation Committee on the basis of the percentage of sugar content, at the time of delivery to a processor, of the sugar beets marketed under individual test contracts in the next preceding 7 years from farms in the county and in adjacent counties.

(8) The "normal percentage of sugar content" of sugar beets for a farm from which sugar beets were contracted to be marketed under any type of agreement other than that commonly known as an "individual test contract" shall be the normal percentage of sugar content of sugar beets for the district (an area in which a common marketing agreement was in use).

(9) The "normal percentage of sugar content of sugar beets for the district" shall be:

(i) For a district in which a beet-sugar factory was operated in 3 or more of the next preceding 7 years, the simple average of the annual average percentages of sugar content, at the time of processing, of all of the sugar beets processed in the district in all of such years in which sugar beets were processed; and

(ii) For a district in which a beet-sugar factory was operated in less than 3 of the next preceding 7 years, the percentage of sugar content of sugar beets established by the Agricultural Adjustment Agency on the basis of the average percentage of sugar content, at the time of processing, of sugar beets produced under similar conditions in the next preceding 7 years.

This determination supersedes, with respect to the 1943 and subsequent crops, the "Determination of Normal Yields of Commercially Recoverable Sugar Per Acre for Sugar Beets, Pursuant to the Sugar Act of 1937, as amended," issued July 27, 1942.

Issued this 3d day of August 1943.

MARVIN JONES,
War Food Administrator.

Quotas Unchanged

The Office Of Price Administration announced on October 12th that the sugar allotments for commercial bakers, confectioners and other industrial users is to remain unchanged for the November-December allotment period. This means that the increases in industrial quotas authorized during September and October, which brought allotments to eighty per cent of 1941 consumptions, remains in effect for the November-December period.

Grinding Begins

The Myrtle Grove factory of the A. Wilbert's Sons Lumber and Shingle Company at Plaquemine, was the first large Louisiana sugar mill to begin grinding operations. This mill started work on Saturday, October 9th. Many other mills are now grinding.

Effects of Different Types of Windrowing on Deterioration of Sucrose in Sugarcane in Louisiana

By John I. Lauritzen, Senior Physiologist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.

Harvesting and windrowing of sugarcane by mechanical equipment are becoming common practices in Louisiana. Most harvesting machines top[1] the cane stalk as well as cut it off at the base. Inquiries have been made whether such cane would keep as well as the untopped cane in the windrow.

Earlier results[2] showed that the loss of moisture and inversion of sucrose were greater in unstripped and untopped cane than in stripped and topped cane when stored under conditions favoring the loss of moisture. When cane of these two treatments were stored at atmospheric conditions that greatly inhibited or prevented loss of moisture, there was little inversion or difference in inversion of sucrose in the two lots.

During the harvesting season of 1939 (November 27 to December 14) deterioration of sucrose in topped cane was compared with that occuring in untopped cane (Co. 281, plant cane) during 17 days in the windrow. The topped cane was covered with severed tops. No significant difference in deterioration was observed in cane of the two treatments.

During the harvesting season of 1942 deterioration of sucrose in cane (Co. 281, plant cane) windrowed by three methods was compared: Cane windrowed by hand, cane windrowed by machine, and cane cut at base and topped by machine and windrowed and covered with tops by hand. The untopped stalks of hand- and machine-windrowed cane formed a compact mat, with most of the butts reaching the bottom of a furrow and the tops forming a thatch of leaves at the exposed surface of the windrow. The machine-windrowed cane may have been more compact than the hand-windrowed cane, because the windrowing machine used in this experiment tends to compress the cane in the furrow. However, the machine occasionally catches hold of the tops and pulls the lower end of the stalk to the surface, thus making breaks in the windrow. These breaks can be partially or wholly repaired by hand. The stalks of the topped cane were cut at the base, topped and deposited on the top of the rows by machine and then placed in a furrow and covered by hand with the severed tops. The stalks were not as systematically arranged as the untopped cane, but the absence of the tops permitted the stalks to settle down in a fairly compact mat.

It is possible that the rather effective barrier of thatched leaves in untopped windrowed cane against freezing temperatures may be disturbed under certain weather conditions. During prolonged moist, warm weather the tops of many of the stalks turn upward, exposing the tops and some of the stalks beneath to any freezing temperatures which may follow. It is also possible that the severed tops covering the topped cane might be disturbed by high winds. No disturbance occurred during the experiments of 1939 (November 27 to December 14) and 1942 (December 4 to December 31), indicating that under the usual weather conditions the severed tops will remain in place.

The results obtained in 1942 (table 1) indicate that there was the least loss of sucrose through inversion in topped cane, a little greater loss in untopped, machine-windrowed cane, and the greatest loss in untopped hand-windrowed cane. These differences may or may not be significant. However, as might be expected from previous results the rate of inversion of sucrose was correlated with the differences in loss in weight as indicated by the differences in the increase in Brix, which had been shown to be correlated with loss in weight.[3] The results obtained from topped cane as compared with untopped cane are also in harmony with the fact that under conditions that favor loss of moisture there is more loss in weight and inversion of sucrose in untopped cane than in topped cane.[4] In any case, the results of experiments thus far conducted show that topped windowed cane kept as well as, if not better than, untopped windrowed cane.

TABLE 1—Deterioration of Sucrose in Co. 281 plant cane when untopped and hand windrowed, when untopped and machine windrowed, and when cut and topped by machine and windrowed and covered by hand with tops.

Treatment	Date of analysis	Days in the windrow	Brix	Apparent sucrose	Apparent purity	Apparent purity drop	Increase in Brix	Juice extraction
	1942		°	%			°	%
Hand windrowed cane, untopped	Dec. 4	0	17.14	15.11	88.2	------	------	60
	Dec. 11	7	18.11	15.73	86.9	1.3	0.97	63
	Dec. 21	17	18.78	16.13	85.9	2.3	1.64	59
	Dec. 31	27	18.92	16.24	85.8	2.4	1.78	60
Machine windrowed cane, untopped	Dec. 4	0	17.34	15.02	86.6	------	------	59
	Dec. 11	7	17.62	15.14	85.9	0.7	0.28	61
	Dec. 21	17	17.95	15.35	85.5	1.1	0.61	61
	Dec. 31	27	17.93	15.32	85.4	1.2	0.59	59
Machine cut (at base) and topped, and windrowed and covered with tops by hand	Dec. 4	0	17.59	15.38	87.4	------	------	60
	Dec. 11	7	17.64	15.50	87.9	+0.5[5]	0.05	62
	Dec. 21	17	17.88	15.54	86.9	0.5	0.29	62
	Dec. 31	27	17.58	15.28	86.9	0.5	−0.01[6]	60

[1] The term "to top" as used in this paper means to sever the sugarcane stalk and leaves at the approximate point between the millable and unmillable portions of the stalk.

[2] Lauritzen, J. I., and Balch, R. T. Storage of mill cane. U. S. Dept. Agr. Tech. Bull. 449, 30 pp., illus. 1934.

[3] Lauritzen, J. I., and Blach, R. T. Inversion of sucrose in the different parts of the sugarcane stalk. Jour. Agr. Research 61:1-16, illus. 1940.

[4] See footnote 2.

[5] Increase.

[6] Decrease.

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Official Release

(1942-43 Fair and Reasonable Prices For Puerto Rican Sugarcane)

Determination of Fair and Reasonable Prices for the 1942-1943 Crop of Puerto Rican Sugarcane

Whereas, section 301 (d) of the Sugar Act of 1937, as amended, provides, as one of the conditions for payments to producers of sugar beets and sugarcane, as follows:

That the producer on the farm who is also, directly or indirectly, a processor of sugar beets or sugarcane, as may be determined by the Secretary, shall have paid, or contracted to pay under either purchase or toll agreements, for any sugar beets or sugarcane grown by other producers and processed by him at rates not less than those that may be determined by the Secretary to be fair and reasonable after investigation and due notice and opportunity for public hearing.

Whereas a public hearing was held at San Juan, Puerto Rico, on January 19, 1943, for the purpose of receiving evidence likely to be of assistance in the determination of fair and reasonable prices for the 1942-1943 crop of Puerto Rican sugarcane; and

Whereas the War Food Administrator is authorized, pursuant to Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, to exercise the powers, functions and duties of the Secretary of Agriculture under the said act:

Now, therefore, I, Chester C. Davis, War Food Administrator, after investigation and due consideration of the evidence obtained at the aforesaid hearing and all other information before me, do hereby make the following determination with respect to the requirements of section 301 (d) of the Sugar Act of 1937:

Fair and reasonable prices for the 1942-1943 crop of Puerto Rican sugarcane. Fair and reasonable prices for the 1942-1943 crop of Puerto Rican sugarcane to be paid by processors who, as producers, apply for payments under the Sugar Act of 1937, as amended, shall be as follows:

(a) When payment for sugarcane delivered to a producer-processor is made by actual delivery of sugar to the producer (colono) on the basis of a stated percentage of 96° raw sugar recoverable from the producer's sugarcane, such percentage shall be not less than 63, in the case of sugarcane yielding less than 12 percent of sugar, or not less than 65, in the case of sugarcane yielding 12 percent or more of sugar, of the recoverable sugar (packed in the customary bags) determined in accordance with the formula given below, and such recoverable sugar shall be calculated fortnightly or monthly, as may be agreed upon between the producer and the producer-processor:

$$R=(S-0.3B)F$$

where:

R=Recoverable sugar yield, 96° polarization.

S=Polarization of the crusher juice obtained from the sugarcane of each producer.

B="Brix" of the crusher juice obtained from the sugarcane of each producer.

F=Factor obtained from the fraction whose numerator is the average yield of sugar 96° polarization obtained from the aggregate grinding during each fortnight or month in which the cane of the producer is ground, and whose denominator is the average polarization of the crusher juice minus three-tenths of the Brix of the crusher juice, both components of the denominator being obtained from the aggregate grinding during the fortnight or month in which the cane of the producer has been ground:

Provided, however, That in the event a mill has been using the formula set forth below to calculate the sugar recoverable from the cane ground during the 1942-1943 crop year, such formula may be used to determine the recoverable sugar from the 1942-1943 crop of sugarcane:

$$R=FS$$

where:

R=Recoverable sugar, 96° polarization.

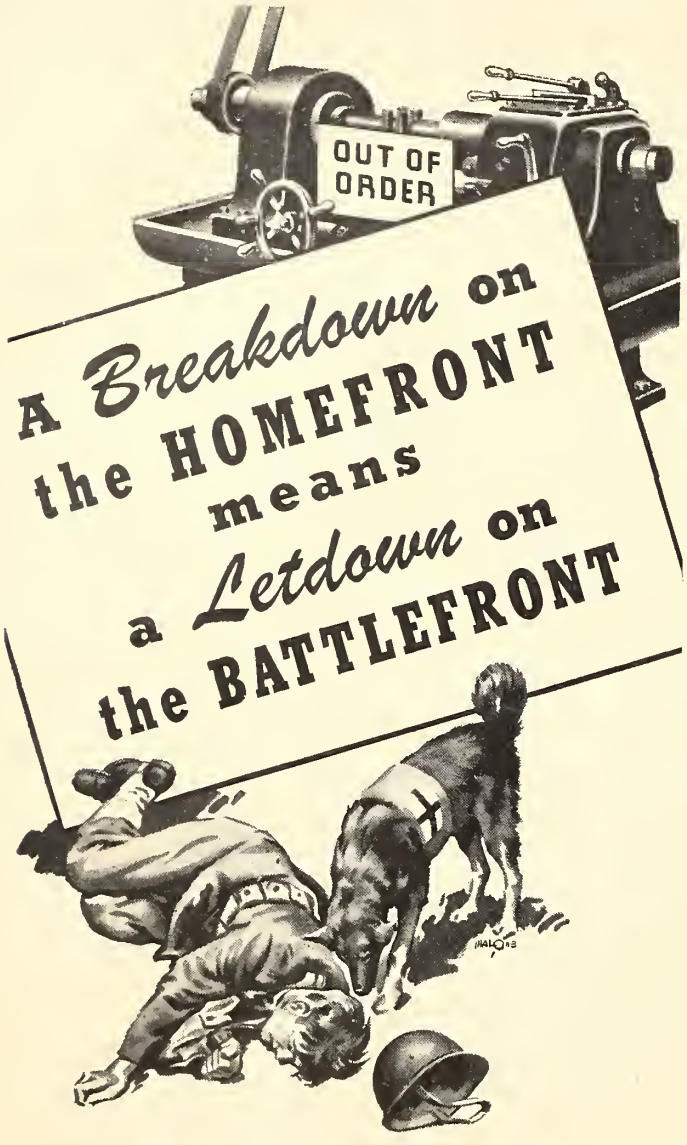
S=Polarization of the crusher juice obtained from the sugarcane of each producer, during each fortnight or month.

F=Fraction whose numerator is the average yield of sugar of 96° polarization obtained from the aggregate grinding during each fortnight or month in which the cane of the producer (colono) has been ground, and whose denominator is the average polarization of the crusher juice obtained from the aggregate grinding during the fortnight or month in which the cane of the producer (colono) has been ground.

Provided, further, That when, through the delivery of unripe or burnt cane, or through any other cause, the recoverable sugar determined in accordance with the aforesaid provisions amounts to nine pounds or less per 100 pounds of cane, or when sugarcane is delivered of the Japanese, Uba, Coinbatore, or other varieties of the Sacharum Spontaneum or Sacharum Sinensis type, the payment shall be on the basis of rates not less than those provided in the 1941-1942 cane grinding agreement between the producer-processor and the producer.

(b) When payment for sugarcane delivered to a producer-processor is made by actual delivery of sugar to the producer on the basis of an amount of 96° raw sugar equal to a stated percentage of the weight of the sugarcane received from the producer (commonly referred to as the "flat rate" basis), the applicable percentage for the computation of the quantity of sugar deliverable to the producer shall be not less than the product of the average number of pounds of sugar, 96° basis, recovered per 100 pounds of sugarcane during the current crop, month, or week (as may be agreed upon), at the mill where the sugarcane was ground and .63, in the case of sugarcane yielding less than 12 percent of sugar, or .65, in the case of sugarcane yielding 12 percent or more of sugar. The figure for the average number of pounds of sugar, 96° basis, recovered per 100 pounds of sugarcane shall be rounded to the nearest one-tenth of a pound. The product of such figure and .63 or .65, whichever is applicable, shall be rounded to the nearest one-hundredth of 1 percent. If payment is to be determined from the sugar recovery for the entire crop, as aforesaid, provisional liquidation shall be made fortnightly or monthly on such bases as may be agreed upon between the producer (colono) and the producer-processor.

(c) When settlement is made in cash, the money value of the sugar which would otherwise be delivered to the producer, as in (a) or (b) above (whichever is applicable), shall be determined on the basis of the average duty paid price for 96° sugar for the fortnight or month (or such other period as may be agreed upon between the producer and the pro-



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ducer-processor) during which the sugarcane is delivered to the producer-processor, converted to the equivalent f. o. b. mill price by deducting selling and delivery expenses actually incurred by the producer-processor: *Provided, however,* That the producer-processor shall adjust (or agree to adjust) the f. o. b. mill price, determined in the aforesaid manner, to give recognition to any reimbursement of selling and delivery expense made to the producer-processor by any government agency: *And provided, further,* That the producer-processor shall submit in duplicate to the San Juan office of the Agricultural Adjustment Agency a statement verified by a certified public accountant of the actual deductions incurred in determining the f. o. b. mill price.

(d) When payment is made by delivery of sugar, as in paragraph (a) or (b) of this section, the producer-processor shall (1) store and insure (or agree to store and insure) all such sugar until the end of the calendar year free of charge to the grower (except that the grower shall bear a proportionate share of any charges arising out of the necessity of utilizing outside storage facilities) and (2) shares (or agree to share) with the producer, on a pro rata basis, all ocean shipping facilities available to the producer-processor.

(e) In addition to the foregoing, the following requirements shall be met:

(1) When sugarcane is delivered to a producer-processor in the name of a person other than the producer thereof (commonly referred to as "purchasing agent"), the producer-processor shall make payment to the producer of such sugarcane in accordance with the provisions of this determination.

(2) The producer-processor shall not, through any subterfuge or device whatsoever, reduce the returns from the 1942-1943 crop of Puerto Rican sugarcane to the producer below those determined above.

Done at Washington, D. C., this 12th day of May 1943.

CHESTER C. DAVIS,
War Food Administrator.

[SEAL]

Official Release

Determination of Sugar Commercially Recoverable from Sugarcane in the Territory of Hawaii, pursuant to the Sugar Act of 1937 (Revised)

Pursuant to the provisions of section 302 (a) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Sugar commercially recoverable from sugarcane in the Territory of Hawaii. The amount of sugar, raw value, commercially recoverable from the sugarcane grown on any farm in the Territory of Hawaii and marketed (or processed by the producer) for the extraction of sugar shall be the amount of sugar, raw value, recovered from such sugarcane.

This determination supersedes the "Determination of Sugar Commercially Recoverable from Sugarcane in the Territory of Hawaii, Pursuant to the Sugar Act of 1937," issued July 2, 1938.

Issued this 5th day of August 1943.

MARVIN JONES,
War Food Administrator.

Latin Molasses

A news dispatch from Washington dated October 12th states that appointment of a House Insular Affairs sub-committee to consider means of "breaking the log jam in getting Caribbean molasses shipped in to aid the American feed shortage" has been announced by Chairman Bell. The dispatch says that huge supplies of molasses in Puerto Rico, Cuba and other islands could be used in the United States to make industrial alcohol, thus freeing grains for feed. Louisiana molasses is not mentioned in the dispatch.

Cuban Negotiations Off

The Cuban Sugar Commission announced on September 28th that negotiations for the sale of Cuban high test and blackstrap molasses to the United States have been broken off without reaching an agreement. The announcement stated that it was not possible for the Cuban delegation to accept the basis of the offer made by representatives of the Defense Supply Corporation and other agencies of the United States Government. The news item from which this information is obtained states that "it was learned from an informed source that the United States negotiators offered 2.40 cents per pound of sugar content for the high test molasses, while the Cubans asked 2.50 cents. It was understood that for the blackstrap molasses the United States representatives offered 5.85 cents per visible gallon, while the Cubans asked 13.50 cents."

STATEMENT OF THE OWNERSHIP, MANAGEMENT, CIRCULATION, ETC., REQUIRED BY THE ACTS OF CONGRESS OF AUGUST 24, 1912, AND MARCH 3, 1933

Of the Sugar Bulletin, published semi-monthly at New Orleans, La., for October 1, 1943, State of Louisiana, Parish of Orleans.

Before me, a Notary Public in and for the State and parish aforesaid, personally appeared Marcel J. Voorhies, who, having been duly sworn according to law, deposes and says that he is the Editor of the Sugar Bulletin and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management, etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, as amended by the Act of March 3, 1933, embodied in section 537, Postal Laws and Regulations, printed on the reverse of this form, to wit.

1. That the names and addresses of the publisher, editor, managing editor, and business managers are: Publisher, The American Sugar Cane League of the U. S. A., Inc., New Orleans, La.; Editor, Marcel J. Voorhies, New Orleans, La.; Managing Editor, none; Business Managers, None.

2. That the owner is the American Sugar Cane League of the U. S. A., Inc., New Orleans, La.; J. J. Shaffer, Jr., Houma, Louisiana, President; George L. Billeaud, Broussard, Louisiana, Vice-President; R. H. Chadwick, Bayou Goula, Louisiana, Treasurer; Frank L. Barker, Lockport, Louisiana, Secretary.

3. That the known bondholders, mortgagees, and other security holders owning or holding 1 per cent or more of total amount of bonds, mortgages, or other securities are none.

MARCEL J. VOORHIES,
Editor.

Sworn to and subscribed before me this 29th day of September, 1943.

ARTHUR A. DE LA HOUSSAYE,
Notary Public.

(Seal)

(My commission expires at death.)

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THE SUGAR BULLETIN

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We stand for the encouragement of Home Industries as against foreign Competition

Vol. 22 NEW ORLEANS, LA., NOVEMBER 1, 1943 No. 3

Fair Price Determination

TITLE 7—AGRICULTURE
CHAPTER VIII—WAR FOOD ADMINISTRATION
Part 802—*Sugar Determinations*
Determination of Fair and Reasonable Prices for the 1943 Crop of Louisiana Sugarcane for Sugar

Pursuant to the provisions of Section 301(d) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Section 802.22k *Fair and Reasonable Prices for the 1943 Crop of Louisiana Sugarcane for Sugar.* (a) Subject to the provisions of paragraph (b), fair and reasonable prices for the 1943 crop of Louisiana sugarcane for sugar shall be (when the price of 96° raw sugar, duty-paid basis, is 3.50 cents per pound) not less than $1.00 per ton of standard sugarcane for each 1 cent of the average price per pound of raw sugar determined in accordance with whichever of the following options is agreed upon: (1) the average of the weekly quotations of 96° raw sugar, duty-paid basis, on the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association for the week in which such sugarcane is delivered; or (2) the simple average of the weekly quotations of 96° raw sugar, duty-paid basis, on the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association for the weeks from Friday, October 8, 1943 (or the Friday within the first marketing week of actual trading), to March 31, 1944, except that, if such quotations do not give full effect to orders or regulations of the Federal Government pertaining to the establishment of a price for 96° raw sugar, duty-paid basis, at New Orleans, Louisiana. the Chief of the Sugar Branch, Food Distribution Administration, may substitute such prices as will give effect to any such Federal orders or regulations:

Provided, however,

(i) That for each decline of ¼ cent in the price of 1 pound of 96° raw sugar, duty-paid basis, below 3.50 cents per pound, the price of standard sugarcane shall be reduced by not more than 3 per centum, with intervening prices in proportion, unless the price of sugar falls below 2.75 cents per pound, in which case no further reduction shall be made;

(ii) That for an advance of ¼ cent in the price of 1 pound of 96° raw sugar, duty-paid basis, above 3.50 cents per pound, the price of standard sugarcane shall be increased by not less than 3 per centum, with intervening prices in proportion, unless the price of raw sugar exceeds 3.75 cents per pound, in which case settlement shall be made on the basis of $1.03 for each 1 cent of the price;

(iii) That the premiums paid for sugarcane of the 1943 crop containing more sucrose in the normal juice than that defined as standard sugarcane shall be not less than those paid during the 1942 crop year;

(iv) That the discounts applicable to sugarcane of the 1943 crop containing less sucrose in the normal juice than that defined as standard sugarcane shall be not greater than those applied in connection with the 1942 crop; and

(v) That, in the event any agency of the Federal Government shall, through any orders or regulations require modification of the normal marketing practices, then the price basis for settlement shall be determined by reference to the results of such orders or regulations and upon approval by the Chief of the Sugar Branch, Food Distribution Administration.

(b) *Processors accepting offer of Commodity Credit Corporation.* Fair and reasonable prices to be paid by processors who have accepted the offer of the Commodity Credit Corporation (copy of which is appended as Exhibit I), shall be:

(1) When the season average price of 96° raw sugar, duty-paid basis, is 3.73 cents or less per pound, the prices calculated in accordance with paragraphs (a) and (c) of this determination,

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Marcel J. Voorhies, Editor
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in which are consolidated
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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
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plus the additional 33 cents per ton of standard sugar cane as provided in said offer;

(2) When the season average price of 96° raw sugar, duty-paid basis, is between 3.74 and 4.04 cents per pound, inclusive, the prices calculated in accordance with paragraphs (a) and (c) of this determination, using a season average price of 3.73 cents per pound, plus the additional 33 cents per ton of standard sugarcane as provided in said offer; and

(3) When the season average price of 96° raw sugar, duty-paid basis, exceeds 4.04 cents per pound, the prices calculated in accordance with the provisions of paragraphs (a) and (c) of this determination.

(c) *Definitions and General Provisions*:

(1) On each ton of Louisiana sugarcane there shall be paid a molasses bonus, such bonus to be computed by taking ½ of the excess, if any, of the average price per gallon of blackstrap molasses, as quoted by the agencies set out above for the period there specified, over 8 cents, and multiplying the product by 6½ (a figure representing the state average recoveries of blackstrap molasses for the three-year period, 1938-1940).

(2) Deductions based upon decreased boiling house efficiency may be made for frozen sugarcane accepted by the processor (it being understood that cane shall not be considered as frozen even after being subjected to freezing temperature unless and until there is evidence of damage having taken place because of the freeze) at a rate not in excess of 3.775 per centum of the payment, computed without regard to the molasses bonus, for each 0.25 cc. of acidity above 2.25 cc. but not in excess of 4.50 cc. (analyzed in accordance with the established methods of the area, with intervening fractions computed to the nearest multiple of 0.05 cc.).

(3) Standard sugarcane shall be sugarcane containing no more sucrose in the normal juice than was defined as standard sugarcane by the processor in his sugarcane purchase contract, or contracts, verbal or written, used in the year 1942.

(4) Cost, such as hoisting and weighing of sugarcane, shall be absorbed by the processor, except in those instances in which the processor did not bear such costs in 1942, but nothing in this subparagraph shall be construed as prohibiting negotiations with respect to the level of such costs, subject, upon appeal, to review by the War Food Administrator or his authorized agent, in the event of changes alleged to be unfair to either the producer or the processor.

(5) Where the only available practicable means of transportation are rail facilities and the distance to the nearest factory is in excess of 50 miles, the cost of transportation may, by mutual consent of the interested parties, and subject, upon appeal, to review by the War Food Administrator or his authorized agent, be shared by the processor and the producer.

(6) The processor shall not, through any subterfuge or device, whatsoever, reduce the returns from the 1943 crop of Louisiana sugarcane to the producer below those determined above.

(Sec. 301, 50 Stat. 910; 7 U. S. C. 1940 ed. 1131; E. O. 9322, as amended by E. O. 9334).

Issued this 3rd day of November, 1943.

MARVIN JONES, *War Food Administrator.*

Commodity Credit Corporation Processor Contract Implementing Support Payment on Sugarcane

Offer to Processors of 1943 Crop Louisiana Sugarcane for Sugar

In order that regular and full delivery schedules may be maintained by producers of 1943 crop Louisiana sugarcane and that full utilization may be made of processors' facilities, with a minimum risk of loss of sugarcane through freeze and other hazards; and in order to enable processors contracting with producers of sugarcane to provide for such regular and full delivery schedules, Commodity Credit Corporation, a corporate agency of the United States (hereinafter called "Commodity"), hereby offers, subject to the terms and conditions specified below, to make payments to processors of 1943 crop Louisiana sugarcane for sugar:

1. Processor's contracts with producers shall provide, weather and other conditions permitting, for regular daily deliveries of sugarcane to the Processor in such quantities as will result in full utilization of the Processor's facilities and will reduce so far as possible the risk of loss to sugarcane through freeze and other hazards.

2. (a) On or after November 15, 1943, Commodity shall, on application of the Processor approved by Commodity, pay to the Processor 25 cents per ton of the total estimated quantity of standard sugarcane (standard sugarcane to be defined in accordance with the custom of the Processor) to be delivered to the Processor by all producers and produced by the Processor for the extraction of sugar during the Processor's grinding season. Such estimated quantity shall not exceed 110 percent of the quantity of standard sugarcane of the 1942 Louisiana crop processed by the Processor, and shall be based on a survey of the standing cane from which deliveries to the Processor will be made and which is produced by the Processor for the extraction of sugar during the Processor's grinding season.

(b) As soon as practicable after March 31, 1944, Commodity shall, on application of the Processor approved by Commodity, pay to the Processor any amount by which (i) the product of the number of tons of 1943 crop Louisiana standard sugarcane delivered to the Processor by all producers and harvested from his own production by the Processor for the extraction of sugar during the Processor's grinding season multiplied by 33 cents per ton of such sugarcane exceeds (ii) the amount theretofore paid under

subsection (a) of this section.

(c) As soon as practicable after March 31, 1944, the Processor shall pay to Commodity any amount by which (i) the amount theretofore paid under subsection (a) of this section exceeds (ii) the product of the number of tons of 1943 crop Louisiana standard sugarcane delivered to the Processor by all producers and harvested from his own production by the Processor for the extraction of sugar during the Processor's grinding season multiplied by 33 cents per ton of such sugarcane.

3. (a) Processor shall be obligated to pay to the producer 33 cents with respect to each ton of standard sugarcane delivered to the Processor by the producer in the event the simple average of the weekly quotations of 96° raw sugar, duty-paid basis, of the Louisiana Sugar and Rice Exchange and the Cane Products Trade Association for the weeks from Friday, October 8, 1943, (or the Friday within the first marketing week of actual trading) to March 31, 1944, does not exceed $4.04 per 100 pounds: *Provided,* That if such quotations do not give full effect to orders or regulations of the Federal Government pertaining to the establishment of a price for 96° raw sugar, duty-paid basis, at New Orleans, Louisiana, the Chief of the Sugar Branch, Food Distribution Administration, may substitute such prices as will give effect to any such Federal orders or regulations.

(b) The amount which the Processor is obligated to pay to producers under subsection (a) of this section, shall be paid as follows: 25 cents of such amount per ton of standard sugarcane shall be paid by the Processor to the producer promptly after the receipt from Commodity of the payment provided for in section 2(a) hereof with respect to all sugarcane theretofore delivered by producers to Processor and promptly after the delivery by producers of sugarcane which is delivered to the Processor thereafter. The remainder of such amount shall be paid by the Processor to such producers as soon as practicable after March 31, 1944.

(c) In the event the Processor fails to pay to the producers entitled thereto any amount required to be paid by subsections (a) and (b) of this section, Commodity shall have the right to recover an equal amount from the Processor, such right being in addition to all other rights of Commodity in the premises.

4. The Processor shall pay to Commodity as soon as practicable after March 31, 1944, 1.65 cents per ton of standard sugarcane delivered to him by producers and harvested from his own production by the Processor for the extraction of sugar during his grinding season for each one cent by which the simple average of the weekly quotations referred to in section 3(a) hereof exceeds $3.73 per 100 pounds, up to and including $3.93 per 100 pounds: *Provided,* That if such quotations do not give full effect to orders or regulations of the Federal Government pertaining to the establishment of a price for 96° raw sugar, duty-paid basis, at New Orleans, Louisiana, the Chief of the Sugar Branch, Food Distribution Administration, may substitute such prices as will give effect to any such Federal orders or regulations.

5. Applications made by Processor for payment hereunder shall be in such form, supported by such documents, and accompanied by such certifications and proofs as Commodity may prescribe.

6. The Processor shall keep complete and accurate books, records and accounts with respect to all sugarcane purchased or produced by or delivered to him and with respect to all payments made to producers by him and shall furnish to Commodity whatever information and reports relating to these transactions Commodity may from time to time request. Commodity shall have the right at any time or times to audit the records, books and accounts of the Processor.

7. Any Processor who desires to accept this offer shall return a copy thereof to Commodity with his acceptance endorsed thereon on or before November 6, 1943.

Wire from Mr. Bourg dated November 3, 1943, says Commodity has agreed to extend deadline from sixth to fifteenth.

COMMODITY CREDIT CORPORATION

By .....
President

ACCEPTED

.....

.....
Processor

By .....

Date .....

Use of Mechanical Harvesters on the Sugar Cane Plantations in Louisiana

By L. C. Bourgeois, Jr.

A report presented at the meeting of the Louisiana Sugar Cane Technologists' Association held in Houma, La., on September 1, 1943.

The mechanical harvester has come into rather wide use in Louisiana during the past two years and has become a very important factor in the economics of the Louisiana sugar industry. It is well that we trace briefly the first faint stirrings, the early beginnings of the first attempts at mechanical harvesting in Louisiana.

In developing a mechanical cane harvester some very difficult problems must be overcome:

1. The material to be harvested is bulky and offers a great deal more resistance to cutting than a grain crop does, for example.

2. The most valuable part of the cane stalk is that part closest to the ground; for that reason, the cane must be cut as close to the ground as possible. This brings about the risk of damage to the cutting tool, which must be guarded against.

3. The cane stalks are not always erect and straight on the row, but are frequently crooked and lodged across the rows, presenting a problem in lifting and gathering.

4. In addition to being cut at the ground cane must be topped and stripped. Cane stalks are not all of uniform length, and the proper height for topping one stalk might be too high or too low for another.

5. Succeeding stubble crops are expected from cane, and the harvester must be so built and operated as to cause no damage to the stubble.

Progressive-minded Louisiana planters and inventors began tackling these problems many years ago. Gaussiran developed a mule-operated cane cutter, or windrowing machine, which he patented in 1904. G. D. Luce patented a cane harvester in 1904 and 1905. Luce continued to work with cane harvesters until about 1918. As a matter of fact, American patents were granted on cane harvesting devices as early as 1889 to a Mr. Wilson, and in 1898 to a Mr. LeBlanc. The Graham-Storey machine followed that of Luce, coming out about 1925. The Falkiner machine was developed in Australia and experimented with in Cuba and Florida during the late twenties. I believe that the Celotex Co. built a machine similar

to the Falkiner harvester for testing here in Louisiana. The writer had the experience of testing out the Falkiner harvester for three years in Cuba, at Central "Punta Alegre". The cane in the tropics, however, grows in such a tangled mass of vegetation that mechanical harvesting is extremely difficult. The Falkiner machine was abandoned because of its high initial cost, its bulk, weight, and lack of maneuverability.

Thus, we see that until comparatively recent years the men struggling to perfect a mechanical harvester have not met with much success. We must remember, however, that these pioneers were struggling against popular opinion, against a relatively ample supply of labor at reasonable wages, and that they had to work with material and engineering technique below that of present-day standards.

Mr. S. A. Thornton of Jeanerette started work on a windrowing machine in 1929 and revived it with improvements in 1935 which marked a long step forward. Mr. J. J. Munson of the South Coast Corp. and Mr. B. C. Thomson of the Thomson Machinery Co. began working on a light windrowing machine about 1937, and had it in the field for the 1938 crop. Both Mr. Thornton and Messrs. Munson and Thomson have continued their efforts, improving their machines each year until they have produced the highly serviceable machines now in the field. Mr. H. B. Naquin of Thibodaux brought out a light machine in 1940 which cut the cane only at the bottom. In 1942 Mr. Naquin added a topping device to his machine and is working on further improvements. All of the machines mentioned above attempt only to cut the cane top and bottom and lay it in some position on the ground. Mr. A. R. Wurtele began work in 1939 on a machine that would load cane in the wagon or cart. Mr. Wurtele had been working on a cane harvester for some time when he decided that a harvester should do what its name implies—it should harvest cane, from the knife to the cart, ready for transport to the mill. Now Mr. Wurtele has perfected his machine to the point where it actually does cut cane top and bottom, and load it in the cart. This is another step forward in the continual progress that has been made in recent years in improving mechanical harvesting.

So, it is seen that after a long struggle through the years we have for use in Louisiana today four different cane harvesters. All of the cane harvester men have got away from the two-row idea and are concentrating on the single-row machine. All of them, for the present, have ceased efforts toward developing a stripping device in the field. It is not the purpose of this writer to compare the various machines and discuss their merits and faults. However, it is necessary to comment briefly on the present-day development of the various machines available to us for use in Louisiana. As you all know, we have in use in Louisiana at present the following cane harvesters:

1. The Thornton Cane Harvester, with 50 machines in operation in 1942. This is a light machine mounted on a tractor, which cuts cane top and bottom and lays it on the row.

2. The Munson-Thomson Hurry-Cane Harvester, with 130 machines in operation in 1942. This is a relatively light machine with its own built-in power unit. It is self-contained and is not mounted on a tractor. This machine cuts the cane top and bottom and can be adjusted so as to lay the cane lengthwise on the row or across the middle.

3. The Naquin Harvester, with 5 machines in operation that cut top and bottom, and with about 40 more machines which cut the cane only at the bottom. The Naquin machine is a very light and simple mechanism which is mounted on the front of a tractor. The bottom cutting device is not power-driven but consists of 2 circular knives or discs opposing each other. The topping device was in the experimental stage last season and is being further strengthened and improved by Mr. Naquin.

4. The Wurtele Harvester, with 7 machines in in operation in 1942. This is a somewhat heavier machine which is mounted on a tractor. As presently designed it is mounted on a Farm-All F-30 tractor. This machine cuts the cane top and bottom, conveys it backward to a loading platform where chain elevators carry it up the platform and discharge it into wagons or carts alongside. This machine has the advantage of loading cane directly into carts. It has the disadvantage of needing 3 rows cut out of each block before it can start. Cane must be stripped down ahead of the machine as it cannot be burned after cutting. It can, however, cut the ditch-bank rows, which cannot always be cut with the 3 other machines.

Cleaning or stripping of cane is still a problem that we have with us in mechanical harvesting. In most cases the shuck is burned off after the cane is cut. With enough labor available it can be stripped down with the pitch-forks ahead of the harvesting machines. Perhaps the solution to the problem will be a cleaning installation at the mill as part of the regular milling machinery. In emergencies, and to prevent loss of cane altogether some mills have been grinding some rather trashy cane, and making necessary deductions from growers' weights.

Having traced the development of mechanical cane harvesters up to the present day, let us see what results have been obtained. I have compiled results on 1942 operations from a number of operators throughout the cane belt. Statistics are sometimes a rather dry topic, but statistics are necessary to present a true picture of the results of the operation of mechanical cane harvesters, and are the only means of making a true comparison of mechanical harvesting versus manual harvesting. Feeling that a paper of this nature would be of much more value to the industry if it reflected the results obtained by a number of operators in various parts of the cane belt, I have obtained figures from representative operators in different sections of the district and present these figures in the tables attached hereto.

No operators whom I have contacted have experienced any damage to stubble crops through the use of mechanical harvesters. It is the consensus that, when properly operated, mechanical harvesters do not have any deleterious effect on the succeeding stubble crop of cane.

In 1941 there were approximately 122 mechanical cane harvesters in operation in Louisiana that harvested approximately 615,000 tons of cane. In 1942 there were 272 machines in operation that harvested approximately 1,540,000 tons of cane. This marked an increase of 123% in number of machines in operation over 1941 and 150% in tons of cane harvested. The critical material and manpower situation has, of course, curtailed production of machines in 1943. Nevertheless, despite these difficulties there were approximately 84 new machines built in 1943. This will give us a total of 356 mechanical harvesters in the field for the coming harvest season. With proper care and intelligent use, these machines should

harvest about 2,800,000 tons of sugarcane in 1943. This is indeed a long step forward in the past few years.

The industry should be extremely grateful to those manufacturers who have been struggling against what seemed insurmountable obstacles to bring mechanical harvesting to the point of development that it has now reached. The industry also owes a vote of thanks to those planters who were willing to take a chance and who encouraged the manufacturers with moral and financial backing when the going was tough. You have doubtless heard the criticism that the mechanical harvester is only suited to the large operator. It is true that the large operator is perhaps the only one who could afford to take a chance by putting money into a comparatively questionable venture, and who had the suitable shop facilities to keep the mechanical harvesters operating. But it must be borne in mind that by pioneering in the use of mechanical harvesters the large operators have released hundreds of hand cutters who could save the smaller operators' cane crops. There is no doubt in my mind that the mechanical harvester has come to the Louisiana cane belt to stay. I believe that as we learn from experience we will iron out many of the "bugs" in present-day machines and, that as time goes by, we will have mechanical harvesters improving in their performance year by year.

Footnote:

I wish to express my thanks and sincere appreciation to the following individuals and firms for their help in furnishing data and for their sincere and friendly co-operation:

Mr. B. C. Thomson; Thomson Machinery Co., Labadieville, La.

Mr. Lyman E. Thornton; Thornton Grab and Derrick Works, Inc., Jeanerette, La.

Mr. George P. Mills; Wurtele Cane Harvester Co., Mix, La.

Mr. Henry B. Naquin, Thibodaux, La.

Mr. Thos. Lowe, Manager, Standard Division, Realty Operators, Inc., Thibodaux.

Mr. J. C. Burden, Manager, Little Texas Plantation, Napoleonville, La.

Mr. M. L. Marquette, Manager, Oaklawn Plantation, South Coast Corp., Franklin.

Mr. John Wilbert, A. Wilbert's Sons Lumber and Shingle Co., Plaquemine, La.

Mr. Jules J. Haydel, Jr., Godchaux Sugars, Inc., Reserve, La.

Mr. Sam W. Bergeron of W. N. Bergeron, Napoleonville, La.

Table—Costs of Operation

Operator No.	Machine Used	Costs per ton of cane[1]					Acres Harv.	Tons Harv.	Tons per Machine	% Lost Time
		Operating Costs	Aux. Hand Labor	Main. and Repair	Depreciation	Total				
1	3 Thomson	.111	.218	.060	.123	.514	845	21190	7063	8
2	6 "	.080	.120	.047	.092	.339	3061	58000	9666	33
3	3 "	.069	.207	.044	.137	.457	1135	19346	6448	25
3	2 Thornton	.056	.207	.023	.090	.376	865	13989	6994	15
4	3 "	.030	.180	.053	.065	.328	1350	29000	9666	10
5	3 "	.056	.240	.100	.099	.495	1000	19000	6333	25
6	3 Thomson	.081	.328[2]	.071	.126	.606	1054	21080	7026	30
6	1 Wurtele	.105	.135	.030	.200	.470[3]	260	5240	5240	10
Totals and Averages	24	.071	.192	.055	.104	.422	9570	186845	7785	19½%

[1] Costs as figured include cutting, burning, and piling (ready to load).
[2] In this case, cane was hand stripped, not burned.
[3] In this case, cane was hand stripped and loaded in carts.

In summation, average costs are not simple, but weighted averages. Cane harvesters have hardly been in use long enough for us to know what the life expectancy might be. For the purpose of calculating depreciation in the above table, I have estimated a 5 year life period, and have accordingly depreciated the harvesters at 20%. In the case of harvesters mounted on tractors which are used after harvest in cultivation, I have depreciated the tractors at 20% also, but have only charged 1/3 of the yearly depreciation on the tractor to harvesting operations.

Preliminary Studies of Periodic Flaming as a Means of Controlling Johnson Grass and Alligator Weed on Sugarcane Lands

George Arceneaux, Agronomist, and Leo P. Hebert, Junior Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture

The satisfactory control of perennial weeds is widely recognized as one of the most serious problems now facing sugarcane growers of Louisiana. The task of satisfactorily cultivating sugarcane fields heavily infested with Johnson grass (*Sorghum halepense*) or Alligator weed (*Alternanthera philoxeroides*), an extremely difficult one at best, has assumed critical proportions because of the existing shortage of labor.

Johnson grass has been an important weed on sugarcane plantations of Louisiana for a number of generations, and although its economic importance as a source of yield losses and increased production costs has been widely recognized, few growers are attempting anything in the way of control measures beyond those incidental to the usual cultivation operations.

When labor was plentiful, sugarcane grown in areas heavily infested with Johnson grass was given a "fighting chance" by repeated rounds of hoeing during the early growing season and although Johnson grass, in most cases, grew luxuriantly and unmolested after "lay by" time, fair to indifferent crops were obtained and a certain measure of weed control was realized. Such a practice, however, was not sufficiently effective to prevent a gradual encroachment of the weed on cultivated areas from year to year. At present there are relatively few plantations in Louisiana where Johnson grass is not a major weed pest. In exceptional cases the infestation is confined largely to waste areas but almost invariably the weed has made serious inroads on cultivated areas. In extreme cases whole plantations, sometimes involving thousands of acres have become so thoroughly infested as to render cultivation of sugarcane a questionable venture under prevailing conditions of curtailed labor supply.

Alligator weed, considered more dangerous than Johnson grass by most growers, is relatively a newcomer. This member of the Amaranthaceae group is a native of South America, and although Small in his "Flora of the Southeastern United States" 2nd Ed. (1913) shows Louisiana within the range of *A. philoxeroides* it is certain that this weed did not become widely distributed over the Sugarcane District until relatively recent years. It first became established along bayou banks where it finds an ideal habitat in damp, periodically submerged areas. From initial infestations along streams this weed has gradually migrated to adjacent plantations, a process which has been greatly accelerated by the distribution of effluents from suction dredges over adjoining agricultural areas and by inundations from the streams during periods of high water. At this time it is one of the most widely distributed and unquestionably the most highly feared of our weed pests.

While finding an ideal habitat in shallow water this plant will grow almost equally well on well drained soil and will prove an aggressive competitor

in almost any situation. Under conditions of adequate light its hollow stem makes a prostrate growth. Stem sections in contact with the ground readily form roots in the nodal region, and because of characteristically rapid growth of the plant, propagation in this manner may be exceedingly rapid. We have not succeeded in germinating the seed and it is believed that it is either infertile or shows an exceedingly low viability.

Stem portions becoming covered with soil either through sedimentation or otherwise are converted into storage organs. The hollow center becomes fleshy, the diameter increases, and the organ assumes the characteristic appearance and role of a rhizome. In addition the plant develops an extensive system of fleshy roots which commonly penetrate to a depth of 18 to 24 inches.

The following data taken from results of studies recently conducted by the writers in a heavily infested area to determine the distribution of roots and rhizomes at different levels, illustrates the extensiveness of the underground system of this plant:

Horizon (Inches below surface)	Tons of roots and rhizomes per acre(1)
0-4	4.224
4-8	1.980
8-12	0.740
12-16	0.350
Total	7.294

(1) Average of 5 determinations, each based on a sample area 2 ft. x 2 ft. excavated to a depth of 18 inches.

Such a system affords a means of storing enormous quantities of plant food elaborated by the plant, and may provide a hoarding place for a large proportion of available soil nutrients. With such a weapon on its side this weed is at an extreme advantage in competition with other plants, and its stunting effects on crops grown in heavily infested areas is readily understandable.

In shady situations Alligator weed makes relatively erect growth and in some cases may attain a height of 3 or 4 feet thus effectively competing with comparatively tall weeds.

The distribution of Alligator weed over cultivated areas is not as widespread as that of Johnson grass but is now progressing at a rapid rate. Scattered infestations are to be found on practically every plantation in the District, and infested areas are almost invariably spreading and increasing in growth concentration. In spots on a number of plantations where growth has proceeded over a sufficiently long period to attain climatic stages, economic production of sugarcane or other field crops is practically out of the question under present conditions. Areas in such condition have not only largely lost their economic value, but, in addition, constitute a serious hazard to nearby fields. In other areas the progress of infestation has not proceeded sufficiently far to preclude economic production of sugarcane but infestation now building up at an alarming rate is a subject of serious concern to all growths thus menaced.

During the spring of 1943 preliminary studies of periodic flaming and certain accessory treatments as means of eradicating each of the two above described perennials were undertaken on a limited scale at the U. S. Sugar Plant Field Station, Houma, Louisiana, and on nearby plantations of the South Coast Corporation. Although conclusive results on all phases of these studies are not now available, some of the observations made are considered of sufficient importance for publication at this time.

Experiments with Johnson grass

In a series of tests at the Houma Station the effects of flaming Johnson grass at different periods were studied. The tests were conducted on land on which crops were not growing. Treatments were applied in duplicate on plots of 1/100 acre by means of a "knapsack" weed-burner using kerosene as fuel. In one series of tests started April 29, 1943, on an area heavily infested with Johnson grass certain of the plots were flamed at weekly intervals, other plots were flamed every other week, and plots of a third set were flamed every three weeks.

The Johnson grass on plots flamed at weekly intervals failed completely to grow back after the eighth flaming. The rhizomes by that time had reached advanced stages of decomposition and no viable buds could be found. Subsequent observations have shown that complete eradition was effected by this treatment.

In the case of plots flamed at bi-weekly intervals occasional plants in a greatly weakened condition still survived on September 11 after 10 flamings.

Plots flamed at tri-weekly intervals continue to show a heavy infestation of the weed after 7 flamings, but the plants show a marked loss of vigor.

In another experiment on an area also heavily infested with Johnson grass the growth was cut back on June 12 and again on June 22. Beginning on June 29 the recurrent growth was killed back by flaming at weekly intervals. In this case the Johnson grass failed to grow back only after the tenth flaming. Subsequent observations have shown that the eradication is complete.

The harmful effect of frequent defoliation, or killing back of stem growth in a perennial plant is, in a large measure, related to a resulting depletion of plant food in storage organs. Therefore a measure of changes in concentration of solids in affected storage organs can be taken as an index of the progressive effect of related treatments. As one phase of these studies, the solids in solution in juice expressed from representative samples of the rhizomes was determined by refractometer at the beginning of each experiment and at different dates within the period of treatment.

Results summarized in table 1 show the effect of frequency of flaming on solids in solution in juice expressed from rhizomes of Johnson grass. It will be noted that in the case of plots fired at weekly intervals, the percentage of solids in juice from rhizomes dropped from 7.9 to 1.8 during the first 35 days of the treatment. By the end of 56 days the solids had been reduced to 0.8 and all plant tissues were dead and in the process of disintegrating. Killing back the growth at two- and three-week intervals while causing measurable drops in percentage of solids in juice from rhizomes proved far less effective than weekly flaming.

Experiments with Alligator Weed

In a series of tests on an unplanted area heavily infested with Alligator weed at the Houma Station certain plots were flamed at weekly intervals and other plots were flamed at bi-weekly intervals, during the period April 26 to September 11. In neither case has the treatment so far resulted in complete eradication although plants have, in both cases, been greatly decimated and are showing a marked decrease in vigor.

Table 2 gives results of determinations of solids in solution in juice expressed from sample of roots taken in the course of experiments from plots having

Table 1. Effect of flaming on percentage of soluble solids in juice extracted from rhizomes of Johnson grass.

Date of sampling and analysis	Duration of treatment (days)	Average precentage of solids			
		Plants flamed every week	Plants flamed every 2 weeks	Plants flamed every 3 weeks	Check (No treatment)
(1943)					
April 26	0	7.9	7.8	7.9	8.0
May 31	35	1.8	3.5	5.3	6.1
June 21	56	0.8*	3.1	4.1	5.4
July 16	81	*	3.4	5.0	6.9
August 13	109	*	3.2	4.9	6.7
Sept. 11	138	*	3.0	3.0	7.1

* All plants and rhizomes dead.

Table 2. Effect of flaming on percentage of soluble solids in juice extracted from roots of Alligator weed.

Date of sampling and analysis	Duration of treatment (days)	Average percentage of solids		
		Plants flamed every week	Plants flamed every 2 weeks	(No treatment) Check
(1943)				
April 26	0	10.5	11.0	10.3
May 31	35	8.5	9.2	9.8
June 21	56	3.8	6.3	10.2
August 13	109	4.8	5.4	12.0
Sept.11	138	3.5	3.0	12.8

received the different treatments. It will be noted that periodic flaming resulted in a marked reduction in percentage of soluble solids in expressed root-sap and that the bi-weekly flaming was apparently as effective in this regard as the weekly flaming. Both treatments have effectively inhibited the development of storage organs and have resulted in some rot among old roots and especially among the old rhizomes.

Discussion of Results

It must be emphasized that tests so far completed have been largely of a preliminary nature, and that while some of the results are exceedingly encouraging these cannot be taken as a basis for recommendations on plantation-scale eradication measures.

The most interesting disclosure of the study, so far, is that Johnson grass can apparently be eradicated in a very short period of time by repeated flaming back of stem growth at relatively frequent intervals. The treatment proved more promptly effective when started during early spring than when started during the summer, even though in the latter case the plants had been previously weakened by being cut back twice prior to flaming. Flame treatments applied in these studies killed all leaves and stem growth to the ground surface and would unquestionably have caused severe injury to sugarcane exposed to it. Therefore such a treatment could not be satisfactorily applied to weeds in growing cane, hence would have to be limited to periods between sugarcane cycles. It is interesting to note that one of the treatments resulted in complete eradication of Johnson grass in time to have permitted the growing of a summer legume crop prior to the usual planting time of the next cane crop.

Results obtained so far with Alligator weed indicate that complete eradication through flaming alone will apparently present a more difficult problem than encountered with Johnson grass. However more needs to be known regarding most effective frequencies of flaming and seasonal periods within which plants may be most harmfully affected.

Observations made in connection with these studies indicate that the present practices of growing the soybean as a green manure crop in areas infested with Alligator weed may result in intensifying the weed infestation. Because of the ineffective shading afforded by soybeans, Alligator weed plants ordinarily grow and reach maturity in large numbers alongside the soybean plants. Mature stems of the weed plowed under with the legume crop will ordinarily survive and be converted into rhizomes, thus greatly multiplying the infestation in the following year.

Results obtained in a test on Ranch Plantation of South Coast Corporation indicate that the marked loss in vigor suffered by Alligator weed as a result of repeated flaming may be advantageously utilized in placing the plants at a competitive disadvantage with neighboring crop plants. Under normal conditions soybeans cannot satisfactorily compete with Alligator weed. In plots where Alligator weed was flamed back at weekly intervals from May 12 to June 14, soybeans planted on June 17 maintained a satisfactory growth advantage over the weed until the legume was plowed under on August 2.

The debilitating effect of the flame treatment may prove an effective means of enhancing the well recognized susceptibility of Alligator weed to shading by plants capable of maintaining effective competition. For this purpose, vigorous cover-crops that grow luxuriantly during summer and fall months should prove relatively more satisfactory than soybeans.

In conclusion it should be pointed out that flaming equipment used in conducting studies described above, while proving well adapted to experimental work would be of little use in an attempt to apply the results to plantation-scale practice. Problems related to the design and construction of flaming equipment suitable for plantation use are entirely beyond the scope of this study, but it may be well to emphasize at this time that information on the operation of devices capable of duplicating, on a plantation scale, flame treatments as described will have to be obtained before the practical value of results outlined above can be accurately appraised.

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Nutritionists--Please Note

(*A reprint from the Lamborn Sugar Market Report of October 11, 1943.*)

Drew Pearson in the Washington Merry-Go-Round of October 3 records the following:

"Washington—A group of officers and men of the quartermaster corps put themselves on a life raft and shoved out into the waters of the Gulf of Mexico, where they lived on starvation rations for five days to determine the best food for shipwrecked men.

They wanted to put certain theories to the test. They had already found that the army's Ration K was not suitable for life-raft diet.

They had a theory that the ideal diet for Eddie Rickenbacker and all wrecked seamen and airmen would be a diet of hard candy. First, candy is a carbohydrate which prevents acidosis, as the near-starving men burn up their body fats. Second, it is a compact ration requiring small space. Third, it keeps well at high temperatures. And finally, pieces of hard candy can be easily divided, thus avoiding quarrels among the survivors.

But all this theory remained to be tested. Under Lieutenant Colonel David B. Dill and Captain Quashnock, a group of men set out on the rough waters of the Gulf, to eat their own theories.

It proved a rather unhappy experience. They were all seasick and miserable. One man was so violently and constantly sick that he had to be "rescued" by the crash boat which was in attendance, and taken ashore.

They lost from eight to 12 pounds each, mostly a loss of water from the system, but they regained weight rapidly when they got back to base at Elgin Field, Cal.

What they gained was a certainty that if you have nothing else to eat, and must choose the lightest and simplest thing in all the range of human foods, the best thing to survive on is candy.

Those who tried to live on "C" biscuit got so thirsty they couldn't take it any more. One man got sick of the candy, and couldn't take it. But the majority certified that the candy was best. Its carbohydrates are prime energy food, since the simple sugar into which they are converted is the body's chief motive power.

Each man took two pocket packages of the candy —a total of 20 pieces—each day.

Result of the experiment is that an official change has been made in the emergency ration now packed in life rafts. Instead of Ration K, which contains meat, biscuits, fruit bar, candy, cigarettes, and chewing gum, the ration now consists of candy, with a few sticks of chewing gum and a few vitamin pills thrown in to fill up the corners of the tin."

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Loads On Truck Tires For Hauling Cane

(*By C. J. Bourg*)

Under Government regulations trucks hauling cane are permitted only a 20 per cent excess over the amount recommended by OPA. Because of the growing shortage of tires and the delay in the synthetic rubber program, it is probable that the 20 per cent overload may be canceled and only 100 per cent of the rated tire capacity will be allowed.

In the interest of maintaining all cane trucks rolling efficiently and at capacity, with a view to guaranteeing the harvesting of the sugarcane crop from the standpoint of hauling facilities, it is urgently recommended that truck-owners do not exceed the allowable tire capacities at any time. Overloading in excess of the 20 per cent permissible can be considered as an "abuse" under tire regulations in which event the truck-owner would have difficulty in obtaining replacement tires and tubes.

By all means, keep in touch with your Parish Rationing Board so that there may be no delays in hauling cane due to violation of Government regulations.

Recent Investigations on the Red Rot of Sugarcane

(*C. W. Edgerton and F. Carvajal, Department of Plant Pathology, Louisiana Agricultural Experiment Station*)

A report presented at the meeting of the Louisiana Sugar Cane Technologists' Association held in Houma, La., on September 1, 1943.

This report on the red rot of sugarcane includes only the investigations that have been carried on at the Louisiana Agricultural Experiment Station and aims to stress the most recent results which have been obtained.

The red rot of sugarcane described from Java in 1892 was first observed in Louisiana in 1908. This was in the halcyon days of the sugar industry in Louisiana when yields were good and profits were large. The report of such a disease meant nothing to the average planter of that period for it was unthinkable to him that a thing like this which he did not know and could not understand could in any way affect his prosperity or his way of life. In fact, he hardly gave the announcement of the discovery of the disease a second thought. It is interesting to contrast this with the response that occurs from the sugar industry when a new disease is reported at the present time.

It is probable that the red rot was largely responsible for the introduction of plant pathology work in the Experiment Station, as a pathologist was added to the Station staff in 1905 primarily to investigate the cause of poor stands which were beginning to be reported in certain areas in the state.

The red rot has played a very important role in the ups and downs of the sugar industry in Louisiana during the 35 year period from the time it was recognized until the present time. To the senior author of this report, who has been associated with the investigations on this disease from the beginning, watching its spread in the field and trying to find some weakness in its life history whereby it might be attacked, the red rot has been and still is one of the very important, if not the most important factor in the Louisiana sugar industry. The disease has reduced the sucrose content of the cane juice and of more importance it has been responsible for poor stands and consequently low yields. Not only has the red rot been the cause of many a headache to the sugar planter but it has also unfortunately kept the pathologists who have worked with it on the spot and in hot water most of the time. When they have talked or written too much about it the growers have inevitably come back with the question, "Well, what can be done about it?" Unfortunately the control of a disease like the red rot which is so well adapted to take care of itself and has but few known weaknesses in its life history cannot be accomplished by a simple prescription. The plant pathologist is at a disadvantage when compared to the human doctor. The human doctor can look wise and remain mum and when his patient dies remark as he is leaving that all was done that could be done and this generally seems to be satisfactory to the relatives. The plant pathologist doesn't get by so easily. He is supposed to know and to give all the answers. He is supposed to be able to describe a complex disease such as the red rot in terms simple enough to be understood by a man who has never looked through a microscope

at a fungus and to prescribe a simple cure that won't cost much money or take much labor.

In the past there was not much that could be done about the control of the red rot except the ordinary precautions about drainage, cultivation, and such. Today the conditions are somewhat better as it is known that varieties vary in regard to their susceptibility. It is possible to select varieties that show a reasonable resistance. Unfortunately very often the varieties which are most pleasing to the agronomist and to the grower are too susceptible to red rot to be safe. Many such susceptible varieties have been discarded often after protest. Some such have been permitted to pass and have gone into cultivation against the better judgment of the pathologist. He however, may have been justified in finally giving his approval for release, at least this may have relieved his conscience, by the knowledge that under the present conditions an unsuitable variety may be abandoned quickly before any serious harm has been done.

The investigations on the red rot at the Louisiana Agricultural Experiment Station have been carried on almost continuously during the 35 years since its discovery. To be sure the work has lagged from time to time when other problems seemed more pressing, but at no time has the work on the red rot been entirely side-tracked. It would be interesting if time were available to trace the course of these investigations and to list step by step the advances which have been made towards a better understanding of the disease. However, most of the earlier investigations up until the past two years have been published and it is sufficient to pass them by at the present time with a brief mention. The earliest investigations were concerned with the red rot fungus and its effect on the sugarcane plant. The results obtained established the fact that this fungus was the chief organism and perhaps the only one of importance that is able to attack and destroy the planted seed cane and stubble pieces.

Much information was also obtained from time to time upon the conditions favorable or unfavorable for the disease. It was determined that the condition of the sugarcane plant has a great deal to do with the severity of the red rot infection. Why this is so we do not as yet know, though we are working on the explanation and have some interesting leads. It also has gradually become recognized that canes differ in regard to their resistance. A part of the explanation for this variation was brought out in 1938 when it was shown that spores of the fungus are able to migrate very rapidly in the ducts of the fibrovascular bundles of certain varieties and with difficulty in others. This was found to be due to the fact that most of the ducts of the latter varieties are not open in the podes. This discovery of the migration of the spores in the ducts has had much influence on the more recent work.

The investigations of the past two years have yielded results which are extremely interesting to the mycologist and may influence the work of the future towards more satisfactory control measures. They have certainly given us a better understanding of the fungus, how it maintains itself, how it attacks the plant, and how it develops in the plant. Some of the more interesting results are being presented at this time. More details will be published later.

A. *Discovery of the perfect stage.* In the life history of many fungi, two spore stages are known to occur,—the imperfect or conidial stage and the perfect stage. As the conidial stage is for rapid propagation, it is often the most common stage observed. The perfect stage which is the sexual stage should occur with all fungi. Many fungi, however, have either dropped the perfect stage or else such stages have not as yet been associated with them.

The red rot fungus, since its discovery in 1892, up until 1942, was known only in the imperfect stage. This stage, however, was discovered by the junior author of this report in 1942 and was connected with the red rot fungus, and since then it has been studied in detail. This stage consists of perithecia containing single-celled hyaline ascospores. In the present classification of fungi, it is a member of the genus *Physalospora.* These perithecia had been previously found by Spegazzini in Argentina in 1896 and described as *Physalospora tucumanensis,* but they were not associated with the red rot fungus.

The perithecia are inconspicuous structures almost entirely embedded in the sugarcane tissues. Also they usually do not develop until after the cane tissues die and begin to dry. For these reasons, they have not previously been recognized. These perithecia are now known to occur in great abundance in the Louisiana sugarcane fields. They cover dead plants that have been smothered by more rapidly growing plants or on plants killed from other causes. They occur on leaf blades, leaf sheaths, and even on dead portions of cane stems. They can be easily developed by placing leaves in a moist chamber. As the leaf tissues die and lose their chlorophyll, the perithecia begin to develop.

The perithecia have been collected on all the different species of sugarcane and many of the sugarcane varieties, hybrids of the various species.

How important the ascospores are in spreading the red rot infection is still a question. They undoubtedly, however, prolong the the period in which spores of some type are being produced on dead and dying sugarcane material. In this way they increase the known efficiency of the fungus in its fight for existence in the field.

B. *Spread of red rot fungus in midribs.* Very commonly the midribs of sugarcane leaves have numerous red lesions on them and frequently these coalesce so that the whole midrib is affected. It has been known that numerous red lesions will develop on a midrib rapidly following a single inoculation. It has been assumed that this spread of the disease must be similar to that occurring in the stems. As mentioned above, in 1938 it was determined that spores spread through the ducts of the fibrovascular bundles. During the past summer, the migration of the spores in the midribs has also been observed.

In leaf sheaths and in midribs there are two types of fibrovascular bundles, one type just underneath the epidermis and the other internal in the tissues. There is usually a single row of the internal bundles. These are very similar to the bundles found in the cane stem and are the ones concerned with the spread of the red rot spores. Following puncture inoculations in midribs, conidia have been found in the ducts of these bundles at considerable distances from the point of inoculation.

The reason why variable results have been obtained in the past with midrib inoculations is due to the fact that these internal bundles are relatively few in number. If a bundle is accidently punctured by the needle at the time of inoculation, the disease spreads through the midrib, breaking out in numerous lesions.

If the needle misses the bundle, then the disease remains confined to a localized area. By inoculating midribs in a shallow puncture which just extends through the sclerenahyma cells of the upper surface, invariably only localized lesions have occurred.

C. *Acervuli formation.* The conidia of the red rot fungus normally form in acervuli. How these acervuli develop, however, has apparently not previously been determined. The acervulus merely results from the attempt of the fungus to break through the host tissues and should not be considered as a definite fruiting structure. The red rot fungus does not normally produce an enzyme which is capable of dissolving or fermenting cellulose and the other cell wall substances. The red rot fungus passes readily from one cell to another but it does not break down the cell walls in order to pass through. In the cell walls, there are normally numerous very small pits. The mycelium passes through these pits. The pits are not enlarged as the mycelium passes through and consequently there is no evidence that there is any cellulose-fermenting enzyme present.

How then, does the fungus get out of the tissues to sporulate on the surface? In the upper surface of the midrib the mycelial threads grow through the pits to the surface cells and the latter become packed full of very active mycelium. The pits in the epidermal cells are then penetrated to the cuticle. The cuticle has no pits and so must give way to the pressure of the developing conidiophores. The conidiophores form between the epidermal cell wall and the cuticle. Only in very late stages does the cell wall seem to break down in any way. Acervuli will form when only the epidermal layer of cell is affected or even on single-celled plant hairs. On the under surface of the midrib, the mycelium pushes out from the stomates as well as from the epidermal cells to form the acervuli.

D. *Infection from appressoria.* Conidia of the red rot fungus on germination produce single-celled, thick-walled, brown bodies which become cemented to the substrate on which they develop. These are known as appressoria. With related fungi, it is known that these appressoria produce germ tubes which penetrate the host tissues by going directly through the epidermal cell walls. Such a method of infection has been suggested for the red rot fungus though the numerous experiments carried on by various investigators in the past have been, to say the least, rather disappointing.

For many years the senior author of this report has realized the importance of having more definite information in regard to how infection takes place, but the pressure of other work has prevented an investigation of the problem. During the present summer, it has been possible to study this phase of the life history of the red rot fungus.

Spores of the red rot fungus germinate on any portion of the sugarcane plant. These spores are produced in great abundance on the midribs and other tissues, and consequently all parts of the plane become covered with them. These spores germinate very quickly and immediate produce appressoria. Even during the very dry periods of the present summer these appressoria were produced in great abundance. In examining surface sections it was often possible to find hundreds of these appressoria in one field of the microscope.

Under these appressoria, the cell walls of the epidermis usually turn yellow to red due to the absorption of a red dye produced by the disintegrating protoplasm of the epidermal cells. This red color apparently develops before any mycelium can be observed in the host cells.

Inoculations in the past in which spores were placed directly on the leaves or stems without injuries were generally disappointing. This apparently may be explained by the method of inoculation and the location of the attempted inoculations. Apparently the spores were placed on midribs or mature stalks, regions which are protected by several layers of cells with very thick walls. During the present summer, very small surface lesions have been developed on midribs but these have not enlarged or penetrated into the pith cells.

Abundant infection, however, has been obtained from appressoria on the inside surface of the leaf sheath and the underlying stem. Inoculations have been made by dropping a spore suspension in behind the young developing leaf sheath. Large lesions entirely through the leaf sheath were present in from 3 to 4 days. Sometimes the whole leaf sheath became discolored. Furthermore, numerous lesions formed on the young stems. These turned red in color and often penetrated through two to four layers of cells. Appressoria were found in abundance on the scales of the young bud and on the root band. Lesions developed at the attachment of the leaf sheath to the stalk. In all of these various lesions, acervuli with abundant spore formation developed rapidly. This is not an unnatural method of spore spread. Under conditions in the field spores are produced on the midribs and these are washed down behind the leaf sheaths. From our present knowledge, it is known that all parts of the plant become covered with the appressoria and on the seed cane these appressoria are just waiting for soil conditions that are favorable for red rot.

Of particular interest from the mycological standpoint is the infection from the appressorium. An extremely minute infection thread penetrates the cell wall. This is not unlike what occurs with some other similar fungi, but such threads have not previously been reported for the red rot fungus. These threads go directly through the cell wall of the epidermis. It seems probable also that these threads follow pits in the cell wall. There is no evidence to justify the statement that a channel is dissolved through the wall. In some cases, the infection thread has been seen to swell slightly between the cuticle and epidermis, but there is no evidence that dormant mycelium forms in this place as has been reported for certain anthracnose fungi. It seems more likely that the mycelium accumulates in the epidermal cell.

Discussion

What does all this mean to the red rot problem? It means that ordinarily in the field every leaf, every leaf sheath, every bud, every root band, and every stalk is covered with appressoria capable of starting an infection and in many cases the mycelium fills the epidermal cells. It is no wonder that seed cane and stubble pieces of susceptible varieties such as Co. 290 break down quickly when conditions are at all favorable for the disease.

No one as yet has shown how the infection goes through the nodes and information on this should be obtained as rapidly as possible. From an early date, statements appear in the literature regarding the infection through root primordia. The evidence which is as yet available does not justify a definite statement in regard to this.

The evidence regarding the presence of appressoria and the infection from these again opens up the whole question of the treatment of seed cane. It is possible that by some treatment these appressoria could be largely eliminated. Some results obtained with the hot water treatment suggest that the better germination which has been obtained may have been due to a partial elimination of red rot. This, however, awaits further investigation.

Weed Control Report

By

The Weed Control Committee of the Louisiana Sugar Cane Technologists Association
(Eaton M. Summers, John C. Burden, and F. A. Graugnard, Jr.)*

Presented at the meeting of the Louisiana Sugar Cane Technologists Association held in Houma, La., on September 1, 1943.

Weed control in Louisiana sugarcane fields has been facilitated during the 1943 growing season by an unusually favorable cultivating season. Many fields, particularly of stubble cane, were laid by without any hoe work. Continued rains at the end of the "lay by" season resulted in the germination of many grass and weed seeds that had apparently remained dormant during the early part of the season with the result that many fields that were not well shaded at that time have since become rather weedy.

TRUCK TIRES

The League has been advised by ODT that the old line (Goodyear, Goodrich, Firestone, etc.) truck tires are all being taken up by the Government and that probably only a very small number will find their way to dealers' hands in the sugarcane parishes.

We have also been advised that Sears, Roebuck and Company, New Orleans, Louisiana, phone Raymond 9611, attention Mr. H. L. Beddoe, has in stock the following sized truck tires which may be secured with ration certificates:

32x6	10 ply
6.00x20	6 and 8 ply
6.50x20	6 and 8 ply
7.00x20	10 ply
8.25x20	10 ply (limited number)
9.00x20	10 ply
10.00x20	12 ply

They also have all sizes of truck tire tubes.

The Jimmie Hanemann Tire Service, 1800 St. Charles Avenue, New Orleans, Louisiana, phone Raymond 3232, has a supply of the following truck tires which may be secured with ration certificates:

36x6	10 ply
6.50x20	6 and 8 ply
7.00x20	8 ply
7.50x20	8 ply
8.25x20	10 ply
9.00x20	10 and 12 ply
10.00x20	12 ply

and has all sizes of truck tire tubes.

The flame cultivator has been demonstrated and used more widely this year than last. The difficulty encountered in securing materials for building new units has prevented more widespread use of this method of weed control. A few individuals have assembled flame cultivators from available materials. Some difficulty has been encountered in securing the right type of nozzle for best results. Some machines have been very successful. Several mule-drawn units have been used this year as flaming is done when tractors are likely to be needed for other operations and when mules are likely to be idle. One 3-row, mule-drawn unit is now being assembled and will be used in cultivating summer-plant cane this fall. A standardized flame-cultivator unit is now being produced commercially and it is understood that a number of these will be in operation next year. This unit is on a separate mounting and is tractor-drawn. The results of yield tests on the Thibaut properties during 1942 at Napoleonville have been reported by Professor H. T. Barr and indicate adequate weed control with no injury to sugarcane. One test on Southdown Plantation gave similarly favorable results.

The "Burden-system" of two years of summer fallow with a winter legume smother crop during the intervening winter has been widely adopted for the control of Johnson grass (*Sorghum halepense*) and has proven quite effective. While it does not always eliminate the Johnson grass entirely this practice does control it sufficiently to largely restore the land to normal productivity. In fact, the 2 years of summer fallow frequently results in increased yields as compared with non-infested fields in the regular rotation. This compensates partially for the loss of use of the land for an extra year between cane plantings. It is believed that farms that are badly infested with Johnson grass can afford to devote upwards of 10 percent of their acreage to this type of control.

The use of this system for the control of alligator weed (*Alternanthera philoxeroides*) has shown some promise but has been less effective than with Johnson grass. Shading by a vigorous growth of legumes or a variety of sugarcane that produces early, dense shade seems to have more promise for the control of alligator weed. It is unable to compete with such plants for sunlight because of its prostrate growth habit.

The ability of certain varieties of sugarcane to compete with and suppress weeds has long been recognized. This should be a primary consideration of every grower in planning his variety planting program.

Ditch-bank weeds continue to be one of our greatest problems. They are not only largely disregarded as a factor in weed control but the customary practice of periodic cutting of ditch-bank weeds by hand results in, as suggested by one grower, transplanting the weeds to the next 2 rows of cane. A number of growers have, for some many years, been using densely growing varieties of cane to suppress weeds on ditch banks. A variation has been suggested by Dr. George Arceneaux (Sugar Bulletin, August 1, 1943), who recommends summer planting of ditch bank rows with such varieties. This row should be planted much closer to the ditch bank than is ordinarily practiced. He further advocates reducing the space between the first and second rows of cane from 5¾ to 6 feet to 4½ or 5 feet assuming that any mechanical difficulties resulting from these two practices would be more than compensated for by the improved weed control.

Some trials have been made with chemicals in the control of ditch bank weeds. No results have come to the attention of this committee as yet that can be recommended to the cane growers.

It is hoped that the widespread interest in weed control may produce in the near future some results of sufficient value to pass on to the cane growers. In the meantime there is nothing that will replace sound farming practices and hard work when it comes to fighting weeds.

* Associate Path., Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration and Chairman of the Weed Control Committee of the Louisiana Sugar Cane Technologists Association.

Administrator Brown Makes Parting Gift

(By C. J. Bourg)

A special holiday season sugar "bonus" for industrial users amounting to 10 per cent of their 1941 sugar base was announced October 21st by Price Administrator Prentiss M. Brown for the November-December allotment period. Present regular allotments are at the rate of 80 per cent of the 1941 base. The bonus brings the allotment for the two-month period to 90 per cent of the base.

This 10 per cent extra allowance is available to all industrial users except for the manufacture of jams, jellies, and other fruit spreads, since provision has already been made whereby manufacturers of such products may apply for and receive as much sugar as they need for processing available supplies of fruit.

"The present increase," said Mr. Brown, "is in keeping with OPA's policy of increasing ration allowances whenever it is possible."

Mr. Brown explained, however, that these special allotments for the November-December period must not be considered permanent increases. He pointed out that the present supply situation gives no assurance that they can be maintained after the first of the year.

It was also pointed out that the order of October 21st in no way changes the special allotments now in effect for the production of certain bakery products, pharmaceuticals, and jams, jellies, preserves and fruit butters.

Application for temporary increases for November and December may be made to local boards between November 10 and December 31.

Wages For War Prisoners

Mr. C. J. Bourg, Vice President
American Sugar Cane League
Union Trust Building
15th & H Streets, N. W.
Washington, D. C.

Dear Mr. Bourg:

This is with reference to your letter of October 18, 1943, concerning the question of compliance with the provisions of Section 301(b) of the Sugar Act of 1937, as amended, on sugarcane farms in Louisiana where war prisoners are used in the harvesting of sugarcane.

In order that Louisiana growers might be advised of the status of war prisoners in connection with fair wage compliance under the Sugar Act, we requested an opinion from the Solicitor of the United States Department of Agriculture in this matter. The Solicitor's opinion states the following:

> "It is our opinion that the grower has complied with the requiremetns of section 301(b) of the act and the applicable wage determination issued thereunder if he pays the War Department for the work done at not less than the rate prescribed by the Determination. The fact that the War Department does not pay the entire amount to the prisoner who does the work is not controlling on the question of compliance. Furthermore, under the circumstances in question, the grower would also be in compliance even though he made a deduction for subsistence and transportation, pursuant to his agreement with the War Department."

Very truly yours,
C. M. Nicholson,
Acting Chief, Sugar Branch

Louisiana Sugars Resume Distribution To Normal Markets

(By C. J. Bourg)

Attention is directed to the Zoning Order which was issued on October 25, 1943. It will be noted that under Paragraph (c) (4) direct-consumption sugar produced or refined in Louisiana may be delivered, shipped or transferred to any point in Zone 8, Zone 9, Zone 11 or to any point in the City of Bristol, Virginia.

Producers of direct-consumption sugars (including plantation granulated and Louisiana crystals) may market their product in Chicago, St. Louis, Milwaukee and St. Paul, and as far west as Oklahoma, excepting the three westernmost counties, all said points being within Zone 11. Indianapolis, Louisville and Chattanooga are within Zone 8. The eastern counties of Texas, bordering on Louisiana, are included in Zone 9.

Thus, the entire Mississippi Valley, extending from Texas and Oklahoma to Bristol, Virginia, with Canada as the northern limit, has been opened to the marketing of Louisiana sugars. This important and interesting development is due primarily to a short sugar beet crop, and the war-time transportation difficulties of marketing off-shore sugars from the Eastern Seaboard refineries.

Official Release

Fair and Reasonable Wage Rates For Production, Cultivation or Harvesting of Sugar Cane in the Virgin Islands in 1943.

Determination of Fair and Reasonable Wage Rates For Persons Employed in the Production, Cultivation, or Harvesting of Sugarcane in the Virgin Islands During the Calendar Year 1943.

Pursuant to the provisions of subsection (b) of section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued.

Fair and reasonable wage rates for persons employed in the production, cultivation, or harvesting of sugarcane in the Virgin Islands during 1943. The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met in the Virgin Islands during the calendar year 1943

if all persons employed on the farm during that period in the production, cultivation, or harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates not less than those determined for the calendar year 1942 (S.D. No. 140 issued July 21, 1942); the wage agreed upon, or the wage paid, whichever is highest.

(a) *General provisions.* (1) The producer shall furnish the laborer, without charge, the perquisites customarily furnished by him, such as a dwelling, garden plot, pasture lot, and medical services.

(2) The producer shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined above.

Issued this 4th day of September 1943.

GROVER B. HILL,
Acting War Food Administrator.

War Food Administration "A" Award

The WFA has announced that they have an "A" Award for Achievement to go to seasonal food processors. This award will be similar to the Army and Navy "E" Award.

The same high standards must be met for "A" awards as those required for "E" awards. In awarding the "A" award, the WFA will consider first quantity and quality of production, in the light of available facilities.

Other major factors will be:

1. Ingenunity and co-operation with the Government in developing and producing war food products.
2. Co-operation in carrying out the purpose of the various food purchase programs.
3. Effective management; ability to overcome production obstacles; satisfactory management-labor relations, including the avoidance of work stoppages.
4. Training of additional labor forces; low absentee records.
5. Accident prevention; health and sanitation.

The same plant can not be awarded both the WFA "A" and the Army-Navy "E".

The Awards Board will consider only plants that have done an *exceptional job* with the facilities at hand. Little consideration will be given to plants functioning largely as they did in peace time, unless they have shown *initiative and perseverance in overcoming obstacles*—or have *increased production considerably*. The labor crisis and the bigger-than-1942 crop present an opportunity to Louisiana processors, providing due attention is given to the five major factors above enumerated.

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We stand for the encouragement of Home Industries as against foreign Competition

Vol. 22 NEW ORLEANS, LA., DECEMBER 1, 1943 No. 5

Washington Report

By C. J. Bourg

The measure to extend the Commodity Credit Corporation (Steagall Bill, H. R. 3477) restricts the powers of the Corporation with respect to subsidies. The extent of these restrictions, as contained in the Bill that passed the House of Representatives by a vote of 278 to 117, has been a matter of debate and disagreement in the House. The Senate will now take up the measure with a view to completing consideration before Congress adjourns in December. It is our hope and expectation that all differences with regard to interpretation of the language of the measure, will be clarified by the Senate, or in the conference committee, before joint action is taken by the House and Senate and Bill sent to the President.

It is the contention of Administration spokesmen that unless the Senate makes some changes in the Bill, the President will not approve. Consequently, there is currently a great deal of conversation about compromises. At least we know that some measure will be acted upon by Congress before January 1st, because on that date the present authority expires with respect to the functions of the Commodity Credit Corporation.

Without going into the controversial discussions ourselves, we submit below the position taken by the majority of the House Banking and Currency Committee, as expressed by Congressman Jesse Wolcott of Michigan, as contrasted with the position taken by the War Food Administration, as expressed by Mr. J. B. Hutson, President of the Commodity Credit Corporation:

Excerpt from Congressman Wolcott's Speech on Floor of the House November 18, 1943

"The courts in interpreting law, interpreting the legislative intent, always consider the committee report. For that reason, the committee report has made it very clear that it is not intended to in any manner interfere with existing law whereby support prices may be announced and loans may be made to support the floor under agricultural commodities.

"About half way down the discussion of section 3, the majority report says:

> "Therefore this section prohibits new consumer-subsidy programs from being announced and prohibits payments on existing consumer-subsidy problems subsequent to December 31, 1943.'

"You will note the term 'consumer-subsidies' is always used to differentiate from producer-subsidies.

"Then the report goes on to say:

> 'This section does not prohibit nor interfere with an operation of the Commodity Credit Corporation or any other agency of the Government with respect to producer subsidies or loans authorized under existing law, including the Emergency Price Control Act of 1942 as amended and supplemented by Public Law 729, Seventy-seventh Congress, approved October 2, 1942, and it does not prohibit or interfere with support prices or the use of Commodity Credit funds made available to the Commodity Credit Corporation by existing law, including section 4 of Public Law 147, approved July 1, 1941, as amended.'

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12

Marcel J. Voorhies, Editor

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The Producers & Mfrs. Protective Assn.

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"Now, let us be fair about this situation. Although we direct the War Food Administrator, the Deparment of Agriculture, or whoever happens to be administering this particular part of the law, the Commodity Credit Corporation, to continue to support prices and to continue to maintain floors in accordance with the so-called Steagall amendment to the Commodity Credit Corporation Act, we do say that if it is necessary to put a support price above a parity price for the purpose of encouraging the maximum amount of production so that we will have adequate food, then and then only will the price have to be increased to absorb that particular price, because the law expressly says that the President or the Administrator of the OPA may set a ceiling on any agricultural commodity at parity. So he cannot set a price less than parity. We say that the price must be increased if the support price is above parity so they will no longer be able to manipulate the support price program to effectuate consumer prices and therefore we assure the farmer, we assure the producer or the processor or wherever the additional expense may be that he is to get the benefit of the support price as we really intended he should for the purpose of encouraging him to increase the production of his product. In other words we make sure that if a support price is put on a product to encourage production if it is going to have its effect, the farmer is going to get it, because it was for the farmer that it was put up; it was not for the consumer."

Excerpt from Congressman Wolcott's Speech on Floor of the House November 19, 1943

"I understand that the War Food Administrator has said that he could not announce a sugar program during the pendency of this legislation because of the ambiguity of the legislation. I have seen a letter which he has written to a Member of Congress so stating. May I say that there is nothing in this pending legislation whatsoever that justifies the War Food Administrator in taking that attitude. As is stated in the majority report, 'This section does not prohibit nor interfere with any operation of the Commodity Credit Corporation or any other agency of the Government with respect to producer subsidies.' * * *

"Assuming for the sake of argument that certain gentlemen are correct in their interpretation that this does interfere with the payment of producer subsidies, which, of course, is denied, this does not in any manner interfere with the operation of subsection (e) of secton 2 of the Emergency Price Control Act of 1942. * * * So, assuming that there is an ambiguity in his act, which I do not admit, the President could under terms of the Price Control Act vest in the Commodity Credit Corporation or any other agency of the Government the power which now vests in the Price Control Administrator to pay subsidies to high cost domestic producers without interfering in any way whatsoever with the general price scale. * * * The only way it could possibly interfere with the sugar program would be in the manner in which the money is raised with which to encourage the expansion of production. That applies as well to the sugarcane program as to sugar beets."

United States Department of Agriculture
Commodity Credit Corporation
Washington, D. C.

November 22, 1943.

Hon. Wright Patman,
House of Representatives.

Dear Mr. Patman: This is in response to your request for an explanation of the effect of section 3 of the bill, H. R. 3477, would have upon the sugar programs administered by the Commodity Credit Corporation.

In order to assist growers in maintaining sugar production in the continental United States in the face of increased production costs, provision was made for increasing growers' returns from the 1943 crop sugar beets by about $1.50 per ton over returns from the 1942 crop. This program is implemented by contracts between the Commodity Credit Corporation and sugar beet processors under which, in order to avoid an increase in the price of sugar to consumers, the Corporation will absorb the increase in producers' returns. A similar program has been adopted for Louisiana sugarcane. In addition, the Commodity Credit Corporation is absorbing increased costs of marine and war risk insurance, ocean freight,

handling charges and internal rail transportation in order to permit sugar from offshore, domestic and foreign areas to be sold to consumers at existing ceiling prices. The estimated cost of this program for the 1943 crop season is $50,000,000.

The increase of about $1.50 per ton in producers' returns for sugar beets is equivalent to about one-half cent per pound of sugar produced from the beets. In order to provide this increased return to the producers through a rise in the price of sugar, it would be necessary to permit an increase of approximately 1 cent per pound of sugar at retail. The reason for this difference is that producers have sold their crop to sugar beet processors under contracts which provide that the processor will receive on the average about 40 per cent of the proceeds from sugar produced and, further, that the margins of retailers and other distributors are computed on a percentage basis.

An increase of 1 cent per pound on the quantity of sugar which is expected to be available for use by domestic civilian consumption in 1944 would amount to about $105,000,000. The price increase on the quantity of sugar which would be used for governmental purposes would equal about one-half the cost of the sugar subsidy payments. Because of the increase of about $105,000,000 in expenditures by domestic consumers for sugar and products in which sugar is used, more than the remaining one-half of the present loss would be represented by increases to the Government in purchases of other products. Thus, the elimination of the subsidy payment on sugar would mean a net increase in the public debt as well as increased costs to consumers.

For 1944 the net governmental cost of eliminating the subsidy would be even greater than indicated above because of slightly higher prices to beet producers and slightly lower transportation costs for imported sugar. While there is nothing in section 3 that would require higher prices to beet producers, slightly higher prices probably will be necessary in order to get the needed increased production. For reasons obvious from the above, higher prices for beets or even the present prices would be difficult to justify if the subsidy payment is eliminated.

I understand it has been suggested that the present program for sugar beets and continental sugarcane would be continued or a similar program inaugurated under the authority of section 2 (e) of the Emergency Price Control Act of 1942, which authorizes buying and selling commodities or making subsidy payments to domestic consumers as may be necessary to obtain the maximum necessary production. This suggestion appears to overlook the fact that section 3 of the bill now under consideration would prohibit the use of any funds by any agency to carry out activities of this character with respect to any agricultural commodity or any commodity processed or manufactured in whole or in substantial part therefrom. If the bill were enacted the effect, I believe, would be to require either that the price of sugar be advanced, with the consequences outlined above, or that support prices to producers be reduced to the level reflected by existing ceilings.

Sincerely yours,

J. B. Hutson, President.

Formula For Sabotage of the Sugar Industry

(Acknowledgment is hereby made of permission by Lamborn & Company, Inc., to re-print the following analysis originally issued by them on October 22, 1943, in pamphlet form.—Editor.)

The Reformer's Field Day

War conditions have provided a fertile field for experiments dear to the heart of the reformer. A pronounced trait of the American character is the innate desire to tell the other fellow how to live his life. This becomes an irresistible urge for those with the power of Government behind them. With many men, power is the supreme intoxicant.

The type of reform which is most obnoxious and dangerous is the kind indulged in by men who enjoy reform for reform's sake, control for control's sake. These zealots, whose vision by their very nature must be extremely limited, will go to any length to foist their judgment and ideas upon the people, regardless of the consequences.

The Creation of Mass Opinion

The creation of mass opinion is comparatively simple. It becomes simpler if it has behind it the power of Government. Mass opinion can be created for good or for evil. The now classic example of the latter type is the Hitler idea. He sold it to the German people. The world is now paying the price.

We in America, like all human beings, are susceptible to ideas. If the ideas are well merchandised, cover a subject in which the masses are not well versed, and are frequently repeated, the general public is inclined to accept them as verity. One of our most priceless assets—the freedom of the press—makes for quick and complete coverage of the people. *Simply put, the formula is—an idea (good or bad), plus an uninformed public on the given subject, plus the use of all available publicity media, plus repetition. The answer is—the creation of mass opinion.* In this way the acorn which is the thought of a *few* eventually becomes the oak representing the thought of the *many*. The result may be constructive or destructive depending upon whether the original idea was correct or incorrect, although even a good idea may produce destructive results when it is *forced* upon the people.

Bureaucracy's Kiss of Death

The downfall of France is attributed by many analysts to the fact that her political structure was honeycombed with bureaucrats. France was conquered spiritually before the Germans touched her soil. Bureaucracy begets bureaucracy. As its tentacles fix themselves on the body politic, freedom of decision, freedom of action and freedom of enterprise are increasingly and inevitably crushed and creative thought and action are paralyzed.

War, even in a democracy, requires a degree of bureaucracy. But bureaucracy feeds on war and only a *vigilant* people can prevent its growth to such size as to strangle freedom. Bureaucracy unchecked will fasten an unbreakable grip upon the post-war life of the people and clamp upon them the very system they have sacrificed blood and treasure to destroy.

Government bureaus, working today in their own mysterious ways, weave a tangled web of amazing design, the full and final effect of which is not always

discernible until the people are hopelessly enmeshed and catastrophe has been visited upon them.

Just as the lives of individuals are affected by this web of bureaucracy, so also is the commercial life of the nation. Some industries, naturally, are affected sooner than others as the heavy hand of concentrated and centralized power falls upon them.

Nutrition by Government Fiat

The war has presented a made-to-order opportunity to nutritionists in the employ of the Government to try out their own pet ideas, using the United States as one vast laboratory and its people as experimental guinea pigs. Sugar has had the misfortune to be singled out by Government nutritionists for special treatment in this great laboratory. A heaven-sent opportunity was given these nutritionists for this particular experiment because sugar was the first food to be put on the ration list by the Government. Step by step the machinery for the creation of mass anti-sugar opinion was put into motion.

In the Spring of 1942 the Government printed messages which were widely disseminated, telling the people, "*Sugar is prized mostly for its sweet flavor. Food experts say you really don't need any sugar at all.*" A Government official at that time said, in an article printed in a magazine with tremendous national circulation, "*We may well find that eating less sugar will not only slim our waistlines but improve our health generally.*"

This year the Government nutritionists wrote and distributed widely a pamphlet stating "*Foods of relatively low nutritional value, e. g., candy, sugar, soft drinks, and highly milled nonenriched cereal products, should be replaced, insofar as feasible, by foods of greater nutritional value.*" *These are merely samples of what has been done along this line.* And in connection with this Government propaganda against sugar, it should be remembered that NUTRITION is *not* an *exact* science, yet the statements and advice are issued with definite *finality*. Right here take especial note that those making these statements are paid by the American taxpayer and have as a backdrop the powerful, commanding and impressive shield of the United States Government. *The mass of the people is inclined to swallow as unimpeachable a statement made by Government Administrators.*

The country has been saturated by the Government with advice of this type on sugar. Releases are issued announcing these "new" discoveries on diets. Naturally all heads of interested Government Bureaus absorb this thinking. At Government expense tens of thousands of leaflets, brochures, and pamphlets are distributed to key dietititians and nutritionists throughout the breadth of the land along these lines. The reports are reflected in medical journals, popular magazines (as a typical example see the magazine "LIFE" for October 4, 1943), diet columns, etc. Every means is used to reach those *moulders of public opinion* who will accept the "edict" as the truth and final word on the subject.

The weed is planted. It is of the spreading variety. Soon doctors, dietitians and other nutritionists are infected. Eventually they are literally millions of people saying, parrot-like, "*they* say that you don't need any sugar"; "*they* say that sugar rationing is 'good' for the health", and "*they* say that foods of low nutritional value, such as candy, sugar, soft drinks, etc., should be replaced". Soon, too, producers of other foods get on the bandwagon made for them by the Government—advertise their substitutes for sugar—whilst other processors of "favored" foods use Government suggested copy to push their own products.

That is the way to influence people. That is the way to make people think what you want them to think. Simple, isn't it?

(To be continued)

(Serial 2 of the above Lamborn analysis will appear in the next issue of *The Sugar Bulletin.*)

Official Release

Bagasse Wages

TITLE 29—LABOR

Chapter V—Wage and Hour Division

In the matter of the application to include certain operations on sugarcane bagasse within that portion of the cane sugar processing and milling branch of the cane sugar industry in Louisiana which has been granted a partial exemption from the maximum hour provisions of the Fair Labor Standards Act of 1938 pursant to Section 7(b)(3) of the Act.

WHEREAS, an application has been filed to include the artificial drying, separating into proper lengths, and grinding of bagasse resulting from the processing of sugarcane into raw sugar, syrup and molasses within that portion of the cane sugar processing and milling branch of the cane sugar industry located in Louisiana which the Administrator determined, on November 18, 1939 (4 F. R. 4615), to be an industry of a seasonal nature within the meaning of Section 7(b)(3) of the Fair Labor Standards Act of 1938 and Part 526 of the regulations issued thereunder and, therefore, entitled to a partial exemption from the maximum hours provision of the Act; and

WHEREAS, it appears from the said application that (1) certain sugarcane mills in Louisiana engaged in operations which are within the scope of the present seasonal exemption subject the sugarcane bagasse to an artificial drying process in order to make it suitable for use as poultry litter, animal bedding and other uses; and (2) the bagasse is highly perishable and must be dried immediately after the crushing of the sugarcane; and (3) the drying, separating into proper lengths, and grinding of the bagasse in the sugarcane mills in Louisiana is part of a continuous operation and takes place concurrently with the processing of sugarcane into raw sugar, syrup and molasses, and does not lengthen the operating season of the sugarcae mills in Louisiana;

NOW, THEREFORE, upon consideration of the facts stated in the said application, the Administrator hereby determines, pursuant to Section 526.5 (b) (ii) of Regulations, Part 526, as amended, that a *prima facie* case has been shown for amending the determination granting an exemption under Section 7(b)(3) of the Act to that portion of the sugarcane processing and milling branch of the sugarcane industry which is located in Louisiana, to include therein the artificial drying, separating into proper lengths, and grinding of bagasse resulting from the processing of sugarcane into raw sugar, syrup and molasses, in sugarcane processing plants in Louisiana during the sugarcane processing season.

If no objection and request for hearing is received within 15 days following the publication of this determination, the Administrator, pursuant to Section 526.5(b)(ii) of the aforesaid regulations, will make a finding upon the *prima facie* case.

Objections and request for hearing from any interested person should be submitted in writing to the national office of the Wage and Hour Division, 165 West 46th Street, New York 19, New York. The application for amendment may be examined in Room 1419-A at this address.

Signed at New York, New York, this 3rd day of November, 1943.

L. Metcalfe Walling, Administrator,
Wage and Hour Division
United States Department of Labor.

Published in the Federal Register
November 12, 1943

Official Release

Sugar Statistics for the First 9 Months of 1943

Distribution of sugar by the primary distributors in the United States during January-September, 1943, as compared with the corresponding period of 1942, was as follows:

	1943 (short tons, raw value)	1942
Refiners' raw sugar (table 1)	12,250	3,316
Refiners' refined sugar (table 2)	3,436,054	2,738,219
Beet sugar processors (table 2)	1,242,152	1,332,809
Importers' direct consumption sugar (table 3)	371,449	395,009
Mainland cane mills' direct-consumption sugar (table 4)	86,635	50,485
Total	5,148,540	4,519,838
Deliveries for export[1]	360,515	151,103
Distribution for consumption in continental United States	4,788,025	4,368,735

The distribution of sugar for local consumption in Puerto Rico during January-September, 1943, was 74,354 tons and for the Territory of Hawaii 45,703 tons. (Table 5.)

Stocks of sugar on hand September 30 were as follows:[2]

	1943 (short tons, raw value)	1942
Refiners' raw	309,959	104,509
Refiners' refined	157,525	190,321
Beet sugar processors	228,373	186,849
Importers' direct-consumption sugar	116,896	52,930
Mainland cane factories	1,850	1,316
Total	814,603	535,925

[1]Department of Commerce data on actual exports not available for publication. Deliveries for export exceed actual exports since they include the stocks held against lend-lease commitments.

[2]Not including raws for processing held by importers other than refiners, nor raws held by refiners but not yet reported by them on Form SS-15A, which amounted to 42,360 short tons, commercial value, in 1943, and 50,096 short tons, commercial value, in 1942

Sugar Statistical Reports

Vol. 10, No. 9—January-September, 1943

TABLE 1

Raw Sugar: Refiners' stocks, receipts, meltings, and deliveries for direct consumption for January-September, 1943 (short tons, raw value)

Source of supply	Stocks on Jan. 1 1943	Receipts	Meltings	Deliveries for direct consumption	Lost by fire	Stocks on Sept. 30 1943
Cuba	152,272	2,092,420	2,044,670	3,417	210	[1]196,395
Hawaii	17,697	672,526	624,588	1,809	39	63,787
Puerto Rico	83,434	409,858	458,279	1,997	0	33,016
Philippines	4,407	0	4,209	0	1	197
Continental cane	91,716	105,242	178,014	5,027	8	13,909
Virgin Islands	0	2,888	2,682	0	10	196
Other countries	10,289	55,214	63,014	0	30	2,459
Miscellaneous (sweepings, etc.)	0	108	108	0	0	0
Total	359,815	3,338,256	3,375,564	12,250	298	309,959

Compiled from reports submitted by sugar refineries on Form SS-15A.

[1]Includes 56,529 tons in customs' custody.

TABLE 2

Stocks, production, and deliveries of cane and beet sugar by United States refiners and processors, (short tons, raw value) January-September, 1943

	Refineries[1]	Domestic Beet Factories
Stocks of refined, Jan. 1, 1943	270,605	1,292,728
Production	3,322,974	177,797
Deliveries	3,436,054	[2]1,242,152
Stocks of refined, Sept. 30, 1943	157,525	228,373

Compiled from reports submitted on Forms SS-16A and SS-11C by the sugar refineries and sugar factories.

[1]The refineries' figures are converted to raw value by using the factor 1.063308 which is the ratio of meltings of raw sugar to refined sugar produced during the years 1941 and 1942.

[2]Larger than actual deliveries by a small amount representing losses in reprocessing, etc.

TABLE 3

Stocks, receipts, and deliveries of direct-consumption sugar from specified areas, January-September, 1943 (short tons, raw value)

Source of supply	Stocks on Jan. 1,1943	Receipts	Deliveries or usage	Stocks on Sept.30,1943
Cuba	68,583	321,659	285,379	[1]104,863
Hawaii	0	0	0	0
Puerto Rico	6,791	66,117	60,875	12,033
Philippines	2,816	6	2,822	0
Other foreign areas	499	21,874	22,373	0
Total	78,689	409,656	371,449	116,896

Compiled from reports and information submitted by importers and distributors of direct-consumption sugar on Forms SS-15B and SS-3.

[1]Includes 19,410 tons in customs' custody.

TABLE 4

Mainland cane mills' stocks, production and deliveries, January-September, 1943 (short tons, raw value)

Jan. 1, 1943	Production	Deliveries: For direct consumption	Deliveries: For further processing	Stocks on Sept. 30, 1943
134,393	50,629	86,635	96,537	1,850

TABLE 5

Dstribution of sugar for local consumption in Puerto Rico and the Territory of Hawaii, January-September, 1943 (short tons, raw value)

Puerto Rico	74,354
Hawaii	45,703

Official Release

Increased Allotments to Wholesalers

Increased allowances in sugar inventories permitted wholesalers and retailers on a temporary basis through November 15 will be maintained indefinitely, the Office of Price Administration announced recently.

Temporary increases were originally allowed by OPA to take care of the anticipated demand for sugar for home canning, and were later continued in effect to supply the heavier supplemental rations allowed to bakeries, confectioners and other "industrial" users.

Since the industrial use continues heavy and at the same time transportation difficulties make it important that adequate stocks of sugar be kept in the hands of both wholesalers and retailers, the increased allowances for inventories, will be continued indefinitely. They may, however, be cancelled by OPA on 30 days' notice if such action should become necessary.

(Amendment No. 103 to Ration Order 3, Sugar, effective November 15, 1943.)

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Official Release
(Virgin Islands)

Determination of Farming Practices to be Carried out in connection with the Production of Sugarcane of the 1944 crop year in the Virgin Islands, Pursuant to the Sugar Act of 1937, as amended

Pursuant to the provisions of section (e) of the Sugar Act of 1937, as amended, the following determination is hereby issued:

Farming practices to be carried out in connection with the production of sugarcane of the 1944 crop year. The requirements of section 301 (e) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to any farm in the Virgin Islands if:

(a) Food crops for human consumption are grown during the period February 1, 1943, to January 31, 1944, on the type of land and in the manner set forth below:

(1) The land to be used for the production of the food crops shall be land suitable for the production of sugarcane.

(2) The food crops planted must be among the following: beans (any type), cowpeas, corn, rice, yams, potatoes (Irish and sweet), gandules (plant crop), tanier, apio, cassaba (yuca).

(3) The acreage of such food crops shall be equal to not less than 10% of the land on the farm on which sugarcane is growing on January 31, 1943 (but in no event less than one-tenth of an acre): *Provided, however,* That not less than 60% of such acreage shall be planted to such leguminous crops as are included in (2) above.

(4) The land devoted to the crops in question shall be suitably prepared by plowing or disking, adequately seeded, and cultivated in a workmanlike manner to assure a good stand at the time of maturity; and

(b) The tops and trash cut from the sugarcane during the 1944 harvest season are applied to the land from which the sugarcane is harvested, except where such land is devoted to the interplanting of the food crops specified in (2) above in the manner set forth in (4) above.

Done at Washington, D. C., this 8th day of April 1943. Witness my hand and the seal of the Department of Agriculture.

GROVER B. HILL,
Assistant Secretary of Agriculture.

[SEAL]

Louisianians on Cane Sugar Refining Industry OPA Advisory Committee

Formal appointment of a Cane Sugar Refining Industry Advisory Committee was announced on Nov. 18 by the OPA. The twelve men named to the committee represent companies that refine raw sugar in the continental United States. They are also members of a similar committee in the WEA, and will be consulted from time to time by OPA and WFA when situations within the industry indicate the need for joint discussion.

Prices of refined cane sugar and other direct consumption sugars are controlled through Revised Price Schedule No. 60, while prices of raw cane sugars are covered by Revised Price Schedule No. 16. Eighteen sugar refining companies, located on the Atlantic, Gulf and California Coasts, are affected by these price schedules.

Committee Members

Members of the committee who were appointed on November 23rd are: Joseph F. Abbott, president American Sugar Refining Co., New York City; Ellsworth Bunker, president National Sugar Refining Co., New York City; Louis Campeglia, president California & Hawaiian Sugar Corporation, San Francisco; E. W. Coleman, president Inland Sugar Co., Milwaukee, Wis.; *Charles Godchaux, president Godchaux Sugars, New Orleans;* Thomas Oxnard, vice president and treasurer Savannah Sugar Refining Co., Savannah, Ga.; Lawrence Washburn, president Sucrest Corporation, New York City; Henry E. Worcester, vice president Revere Sugar Refining Co., Boston; Louis V. Place, Jr., vice president and treasurer W. J. McCahan Sugar Refining & Molasses Co., Philadelphia; *W. C. Kemper, manager and vice president Sterling Sugars, Inc., Franklin, La.;* Walter Woodul, Imperial Sugar Co., Sugarland, Tex., and *G. M. Talmadge, Henderson Sugar Refinery, Inc., New Orleans.*

Tire Recap Price Set

Maximum prices for recapping passenger car tires with Grade A camelback have been set by the OPA. Maximum prices for Grade A are slightly higher than those set for Grades C and F. Grade A formerly was not available. The price for recapping the 6.00x16 size tire, which is most numerous, is $7 for Grade A, $6.70 for Grade C and $6.50 for Grade F camelback when the customer supplies the tire carcass for recapping.

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THE SUGAR BULLETIN

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We stand for the encouragement of Home Industries as against foreign Competition

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Official Release

New Ceiling Prices on Syrup and Edible Molasses

OFFICE OF PRICE ADMINISTRATION

The regulation controlling producer and packer prices of syrups and producer prices of molasses was revised in its entirety today (Dec. 6th) by the Office of Price Administration, with increases in the prices of country cane syrup, commercial cane syrup and one type of molasses and with a decrease in another type of molasses.

The increase in the maximum price of cane syrup, will reflect increases in returns to sugarcane growers. Molasses producers' prices formerly had been frozen at their March, 1942 "highs" and today's action corrects a distortion in pricing. Since the syrups and the two types of molasses are sold under fixed mark-up at wholesale and retail, both the increases and the reduction will be passed on to the housewife.

The retail price of a number 10 can of country cane syrup having a net content of slightly less than one gallon will be increased about 10 cents and the retail price of a similar size can of commercial type cane syrup will be increased 4 to 5 cents. Differentials for different sizes are in the same proportion as in the original regulation. Also included is a new size case of 24 No. 2 cans.

The producers' ceiling for commercial cane syrup, formerly known as Louisiana cane syrup, is increased from 35 cents a gallon to 39 cents a gallon in tank car sales. The 39-cent maximum was approved by the Office of Economic Stabilization to assure production and correct the relationship between syrup and molasses prices.

The producers' ceiling for country cane syrup, formerly known as Georgia cane syrup, which is consumed largely in the southeastern and deep southern areas producing it, is increased from 60 cents a gallon in barrels to 63 cents a gallon in barrels.

The pricing system for country cane syrups in Louisiana, Arkansas, Mississippi and Texas has been changed. Packers in those states formerly had been considered in the "southern zone" and had been required to sell outside that zone f.o.b. Cairo, Georgia. They now sell on a delivered basis of f.o.b. mill, plus actual freight charges.

The increase in the country syrup price came as a result of a refiguring of the parity formula.

Ceiling prices for package syrups are raised to reflect the indicated increases in the prices of bulk syrups. Thus, the price of a case of six number 10 cans of country type syrup delivered in the southern zone is raised to $5.16, an increase of 26 cents a case. The packers' price of the same size pack of commercial type syrup is raised to $3.45, an increase of 20 cents.

Formerly, the syrup mills had been classified by size, dependent upon the number of rollers and cane grinding capacity, the manufacturers of the commercial syrup having had the larger plants. Recently, OPA learned that some mills were planning to reduce the number of rollers and consequently their capacity for grinding cane in an effort to obtain the higher price. To prevent this, OPA said further that

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THE
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Marcel J. Voorhies, Editor

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.

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the mills are now classified on the basis of practices normal for them in 1941.

The two types of molasses covered by today's action, both known as high grade molasses, are "first molasses" and "second (boilback) molasses." Both are the by-products of sugar refining and are classed according to the amount of sugar which has been extracted.

The per-gallon-in-tank-car maximum price for first molasses is 38 cents. This represents a rollback from the average under the March, 1942 "freeze" which was about 40 cents. The per-gallon-in-tank-car maximum price for second molasses is 28 cents. The March, 1942 "freeze" average on this was about 26 cents.

While there are several other changes affected in the revision of the regulation, there is *no* change in pricing at this time so far as syrup blenders are concerned. The question of blender prices is under study, OPA said.

Producer-packers of country cane syrup no longer need actually store their product prior to sale to enjoy the producer-packer price. The differential is the same as it was under the original regulation.

Accumulators, persons who gather country cane syrup from the producing farmers and resell it, have been granted an increase from one to two cents a gallon for their handling charge. This increase was allowed after OPA became convinced that accumulators, who, for the most part, are country store operators, had been performing the accumulating service for less than cost.

The revised regulation also specified that the word "gallon", as is used in the regulation, refers to a standard United States gallon, unless a "Georgia gallon" is specified. A Georgia gallon is 1.05 United States gallons. The trade practice of gauging the content of a barrell in gallons by dividing the gross weight by 12 is recognized in the revision.

(Revised Maximum Price Regulation No. 291—Certain Syrups and Molasses—effective December 11, 1943).

Official Release

(Abandonment and Crop Deficiency Payments in Mainland Cane Sugar Area)

CHAPTER VIII—WAR FOOD ADMINISTRATION

Part 802—Sugar Determinations
Mainland Cane Sugar Area

Determination of normal yield of commercially recoverable sugar per acre and eligibility for payment with respect to abandonment and crop deficiency for farms in the mainland cane sugar area (revised).

HAIL AND FAREWELL!

When the sugar program was first inaugurated by the U. S. Department of Agriculture in 1934, among the officials who first came to Louisiana to plan the program was James E. Dickey. His engaging personality and his fair-mindedness engendered confidence and friendship in the minds and hearts of those sugar-cane growers and processors with whom he came in contact. It was, therefore, a disappointment for the Louisiana growers that Jim Dickey later resigned from Government service. However, as the Director of the Association of Puerto Rican Sugar Producers, he continued to maintain a cordial relationship with officials of other organizations representing domestic producers of sugar. His untimely passing last month was the cause of sorrow and deep regret in sugar circles, where he had become a recognized leader and co-operative worker. Those of us who knew him best and were more closely connected with him in his activities,—not always in agreement on legislative and administrative matters—will miss the benefit of his profound knowledge of economics and his understanding of the problems of the sugar industry. We have suffered the loss of the counsel and broadmindedness of a fellow-worker who never permitted a difference of opinion to cloud his judgment or his friendship. His example is our heritage.

Pursuant to the provisions of section 303 of the Sugar Act of 1937, as amended, and the Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

802.25 *Normal yield of commercially recoverable sugar per acre and eligibility for payment with respect to abandonment and crop deficiency for farms in the mainland cane sugar area.* (a) *Normal yield calculation.* The normal yield of commercially recoverable sugar per acre for any farm in the mainland cane sugar area in which sugarcane is grown and marketed (or processed by the producer) for the extraction of sugar shall be:

(1) The average number of hundredweights of commercially recoverable sugar per acre of sugarcane harvested on the farm and marketed (or processed by the producer) for the extraction of sugar during the crop years 1937-38, 1938-39 and 1939-40 (as shown on applications for payment under the mainland sugarcane programs), if sugarcane for sugar was harvested on the farm in all of such crop years, or

(2) The average number of hundredweights of commercially recoverable sugar per acre of sugarcane harvested on farms in the community in which the farm is located and marketed (or processed) for the extraction of sugar during the crop years 1937-38, 1938-39 and 1939-40, if sugarcane for sugar was not harvested on the farm in all of such crop years.

(b) *Eligibility for abandonment and deficiency payments.* Any farm located in a parish, county, or local producing area, as defined herein, in which actual yields of commercially recoverable sugar from the sugarcane for farms comprising 10 percent or more of the sugarcane acreage of all farms in such parish, county, or local producing area, were 80 per cent or less of the normal yields therefor, because of drought, flood, storms, freeze, disease or insects, shall be eligible for abandonment and deficiency payments.

A "local producing area" shall be all contiguous farms which are found by the Parish or County Agricultural Conservation Committee of the Agricultural Adjustment Agency in which the farm is located to be similar with respect to types of soil or with respect to topography: *Provided, however,* That farms separated from other farms by any natural barrier such as mountains or large areas of land shall not be included within the same local producing area.

This determination supersedes the "Determination of (1) Normal Yield of Commercially Recoverable Sugar per Acre and (2) Eligibility for Payment with Respect to Abandonment and Crop Deficiency for Farms in the Mainland Cane Sugar Area, Pursuant to Section 303 of the Sugar Act of 1937, as Amended," issued October 22, 1940.

Done in Washington, D. C., this 7th day of December, 1943.

Ashley Sellers,
Asst. War Food Administrator.

★ ★ ★ ★ ★ ★ ★ ★ ★

BACK THE ATTACK

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WAR BONDS

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Formula For Sabotage of the Sugar Industry

(The first serial of the above entitled analysis by Lamborn & Company, Inc., which appeared in the last issue, discussed reformers and bureaucracy, and nutrition by Government fiat. Serial 2 now takes up the results of bureaucracy and discusses the administration of the sugar industry by Federal Agencies in Washington.)

Results

The results are far reaching. A form of thought is created along these lines:

1. Why grow sugar beets and sugarcane if sugar is non-essential or harmful?
2. Why use labor, power and supplies for the production of sugar if sugar is non-essential or harmful?
3. Why use ships for the transportation of sugar if it is non-essential or harmful?
4. Why use railroad cars for the transportation of sugar if it is non-essential or harmful?

Finally, as the *contagion* spreads, the public is fed many expressions of which the following is a typical example—written *this year* by an advisor to the U. S. Department of Agriculture (an economist, *not* a nutritionist) and disseminated widely—*"Where does sugar fit into such a food program? In strict reason it fits in only as a preserver and conditioner of other more valuable foods. Sugar contains absolutely nothing but calories."* (*NOTE: A profound statement indeed—somewhat like saying that gasoline in a motor does absolutely nothing but make it go. The inference appears to be that sugar contains no vitamins and, therefore, is of little value as a food product. It might properly be observed that man cannot subsist on vitamins, since vitamins are not food, and that a minimum number of calories per day is essential to his well-being. Sugar contains 1,815 calories per pound. As for vitamins, it is interesting to note that the public is getting its vitamins elsewhere, apparently in increasing abundance. For example, according to "TIDE" of October 15, 1943, in 1942 the commercial vitamin business had a volume of around 130 million dollars and in 1943 it will be much larger—perhaps 200 million dollars. In 1939, according to this source, the vitamin volume was only $1,000,000, which presents 1943 volume as representing an increase of fantastic proportions—19,900 per cent.*)

The economist continues in the following vein—*"Per hour of farm labor sugar beets furnish fewer calories than wheat and far less than dry peas or soybeans. Most of the land in sugar beets could be used in other uses that would contribute more to the national dietary than does the sugar. But national programs must take into account well-established irrationalities in human behavior."*

Another interesting item is an article published this year in a magazine with national circulation, written by a Doctor of Philosophy, which reads in part, *"Serious pitfalls lie ahead of us if we invoke the war as a temporary situation, momentarily depriving, to be followed by a return to a halcyon world where everything will be the same as it was before the war. Such an attitude was probably partly responsible for the increased use of sugar after the deprivation during the last war."*

We could continue the quotations ad infinitum. But it all may be likened to the Roman Statesmen's re-

peated exhortation that "Carthage must be destroyed". *And finally Carthage was destroyed!*

Scope of Sugar Industry

Now let us pause for a moment and get a birds-eye picture of this great industry which is under attack—under attack since an attack on the product is an attack against the farmers, the workers, the investors, the business men and all involved in that industry.

1. The annual sugar bill of this nation is around ¾ of a billion dollars—this despite the fact that the price of sugar is approximately the same as it was *PRE*-Pearl Harbor. (Incidentally, we know of no no other important food commodity in the United States that is selling at almost Pre-Pearl Harbor prices. We repeat, there are 1,815 calories in each pound of sugar. Calories are heat units—necessary to the maintenance of life. *Sugar is the greatest food value on a caloric basis in the United States today*).

2. Tens of thousands of farmers and workers are engaged in the production of sugar and its vital by-products and these by-products are especially essential in wartime. It should also be noted that in practically all communities where sugar is produced the economic life of the communities revolves around the sugar industry.

3. Millions upon millions of dollars—largely small investors' savings—are invested in the hundreds of beet sugar plants, sugar refineries and sugar mills of the United States, Hawaii, Puerto Rico and Cuba—our main sources of supply.

4. Countless other industries, and their people, draw support from the sugar industry.

Administration of Sugar Industry

the war period? By a group of Federal agencies in the war period? By a group of Fedegar agencies in Washington which makes *"SUGAR POLICY"*. Thus in a comparatively *few hands* there is entrusted the destiny of many branches of the sugar industry and the lives of all within it.

(A) Government men determine the amount to be produced;
(B)—determine the amount to be imported;
(C)—set up standards of pay for labor;
(D)—set up the standards of return for farmers;
(E)—set up the sales price of sugar;
(F)—determine the place it shall be sold, etc.

In the matter of beet and cane sugar production in the United States any incentive payment that is set at a higher figure for other field products than sugar will automatically destroy interest of the farmers in sugar production. In this latter instance the government nutritionists' hand is seen in the report of the Sub-Committee on U. S. Food Allocation Policy, of July 1943, which significantly includes the following: *"However, it is unlikely that we shall get them—shifts in production to crops considered to have higher nutritional value—so long as present price relationships encourage many of the less efficient nutrient producers and discourage the more efficient ones. It is essential to adjust prices and provide other incentives as well, if we expect to stimulate the desired changes".*

It will be seen that a heavy and serious responsibility rests on the shoulders of a comparatively *few* Government men who can make or break the *many*—a responsibility that calls for the greatest intelligence, experience and judgment, as well as the avoidance of radicalism and reform.

Here we have, then, on the one hand a *small* group of Government men—nutritionists—who go to great lengths to discredit sugar, and, on the other hand, a *small* group of Government administrators who *can* be influenced by the first group.

Can the Industry Defend Itself?

It may reasonably be asked "But hasn't the sugar industry any means of protecting itself?". The answer to that question is yes and no—but mostly no. Congress should be a source of relief but insofar as we have been able to learn Senators and Representatives who take up the sugar problems of their constituents with government sugar agencies generally receive only stereotyped answers.

Oh, yes, the Government has "Business Advisory Committees". These, as we see it, are a type of protection to Government—insulating the Government against the charge of arbitrary action. Industry proposes and Government disposes. As a matter of fact, the United States Beet Sugar Industry "advised" for 5 months last Winter—but it could only "advise"—and as a result this year is harvesting one of the smallest crops in many, many years. The blame for this cannot be placed entirely on bad weather and labor conditions but substantially on the excessive procrastination by Government in working out the beet problem. And the Government previously had given impetus to other crops by incentive payments which caused the switch of normal beet sugar acreage to other crops.

The "privilege" of protest is all too frequently dismissed by Government men with the question, "Man, don't you realize we are in a war?" And Mr. Business Man, regardless of his judgment and wisdom born of experience, finds that he is bumping his head against a stone wall. After all, the Government men hold all the aces!

Yes, of course we are at war! The businessman, the farmer and the people generally are as fully aware of this as are Government men—perhaps more poignantly so. Are they not sacrificing their sons and daughters on the altar of democracy? Must they co-operate with the theorist in the destruction of their life's work even though they know they are conducting their affairs and doing their work in the best interests of the war effort? Must the sugar industry and the men who have helped to build it destroy themselves in the name of bureaucracy with no benefit to the prosecution of the war?

A Concrete Example

It is reasonable for our readers to ask whether the foregoing is overdrawn. Let us use a current example. There is a striking one in the case of the United States beet sugar industry.

Here is the picture graphically. The beet sugar industry in this country was begun experimentally more than 100 years ago. When the surface of our great empire west of the Mississippi River had hardly been scratched, agriculturally and commercially, when the plains were mere grazing lands for the millions of buffaloes, the Mormons purchased equipment for a complete sugar factory in Liverpool, England, transported it up the Mississippi and Missouri Rivers to Fort Leavenworth and across the plains in an ox-team caravan to Utah.

That step was not taken by those hardy pioneers without immeasurable hardships, loss of life, and great suffering. In the ensuing years, little by little, the beet sugar industry was developed in this country by pioneering Americans who were willing to venture their time, their labor and their savings in the creation of an industry that was constructive in the lives of the farmers and workers in those communities.

Since the beginning, 185 beet sugar factories have been built in the United States and, although the mortality rate during the experimental venture period was frightfully high, there are today 80 beet sugar factories in the United States. There are $250,000,000 invested in these 80 plants and their supporting appurtenances. There are approximately 100,000 farmers with a much greater number of farm and factory employes and businessmen, in 19 states, interested in maintaining the industry. Many localities are importantly sustained by sugar beet agriculture and processing

THIS YEAR, believe it or not, 26 of these 80 factories are completely idle!—despite the fact that we are at war, that sugar is being rationed, that much more sugar is needed to satisfy the requirements of the U. S. public, that sugars are being shipped from our shores in vast quantities to meet the needs of our armed forces, that sugars are being shipped in large quantities from our shores to meet the needs, on a Lend-Lease basis, of the Britons, the Russians and many other nations.

There indeed you have a fistfull of rank inconsistencies. But don't overlook the rankest inconsistency of all—to wit:—the United States Government nutritionists tell us that there is little nutritional value in sugar, but we, *at tremendous expense to the American taxpayer*, are seeing that other nations get sugar, while steps are being taken to destroy an industry which was created by sweat and toil and savings.

Does it make sense to have 26 beet sugar plants closed down in the United States under these conditions? Is it logical to destroy industry and production and at the same time, *at the American taxpayer's expense*, build ships and use those ships to transport sugar to the far corners of the world?

We might, paranthetically, at this point observe that if foods like sugar and candy are thought non-essential let a test be made—take it away from our soldiers and sailors here and abroad and see what happens.

Getting into a few statistics, it is interesting to note that the production of beet sugar in this country for the past five years was as follows:

Crop year					
1938-1939	1,681,778	short	tons,	refined	sugar
1939-1940	1,648,882	"	"	"	"
1940-1941	1,770,210	"	"	"	"
1941-1942	1,478,183	"	"	"	"
1942-1943	1,616,367	"	"	"	"

The new crop beet sugar production of the United States will be but little over 1,100,000 tons.

In July of this year a Sub-committee on United States Food Allocation Policy of the Food Advisory Committee of the War Food Administration of the Department of Agriculture made a study in which they state: "Sugar beets would be cut twenty-five percent in irrigated areas and completely eliminated in non-irrigated areas. This means a cut in sugar beet acreage from 1,049,000 acres in 1943 down to 600,000 acres in 1944 and 465,000 acres in 1945". *Is it not logical to assume that the Sub-Committee absorbed its ideas from the Government nutritionists on the question of the essentiality of sugar?*

The Sub-Committee's statement speaks for itself and reflects, in our opinion, the Government nutritionists' preachments that have gone before. On the basis of cause and effect, if the assumption that a product is not essential is accepted as fact, then it must necessarily follow that it is nonsense to devote land and labor to its production. *The propaganda against sugar as a food and the recommendation of a transfer of acreage from sugar to other products, are joined together as closely and indivisibly as Siamese twins.*

The Government's Sugar Production Restriction Policy

Snce the establishment of sugar rationing in the spring of 1942 the Government has persisted in a poplicy of restricting sugar production. In addition to the beet sugar example it should be noted that in 1943 Cuba, which is one of our chief sources of sugar supply and an important world market shipper, could have produced 5,000,000 tons of sugar. Cuban producers generally desired to produce a full crop for obvious reasons. Our Government being the only buyer was in a position to dictate the size of the crop. In consequence Cuba produced a "decreed" crop of 3,225,000 tons.

We have constantly urged the Government to go "all-out" for the production of sugar in the Western Hemisphere. One of the excuses given by the Government for the restriction of sugar production was that a shortage of shipping would prevent the movement of sugar. Our answer to that has been that wise planning called for reserves of sugar to be built up in all sugar producing areas against the time when transportation should be available and when we would be asked to meet the gigantic demand for sugar that would come from the rest of the world as the Allies wrested the "occupied nations" from the grasp of the Axis. Otherwise, we maintained, domestic sugar rationing like the "old man of the sea" will be hard to shake off even after the war shall have ended.

Furthermore, we have repeatedly pointed out that, with great sugar producing areas like the Philippines, Java, the Russian Ukraine, and many other nations in the enemies' hands and with sugar producing factories in those coutries presumably either robbed of vital machinery or totally destroyed, we could make *no* mistake in building up the sugar reserves in the Western Hemisphere, but that we could make *a great mistake* by a *short-sighted policy* of restricted sugar production. It took no vast amount of wisdom to know that this was necessary.

It only required common sense and a reasonable businessman's appraisal of the obvious. Yet the Government has continued its policy of restriction and has only, in the very recent past, grudgingly modified slightly its attitude. Under the circumstances is it not natural to look for the government nutritionist in the woodpile.

The hour is late, but the Government should waste no more time in completely reversing its policy and in doing everything possible to encourage maximum production of sugar everywhere in the Western Hemisphere.

President's Attitude on Sugar

In view of President Roosevelt's two statements concerning sugar, made this past Summer, it is quite incomprehensible to us that he apparently has not received the whole-hearted co-operation of the chiefs of the interested sugar bureaus in fulfilling his statements to the America public. Those statements were as follows:

From his veto message of July 2nd:

"When I talk of important key commodities I do not mean fur coats or tailored suits or caviar. I mean the necessities of life, things like bread, milk, butter, sugar, coffee, ordinary meats, fats and canned food—things that plain working folks must have . . ."

From his fireside radio speech of July 28th:

"One tangible result of our great increase in merchant shipping, which will be good news to civilians at home, is that tonight we are able to terminate the rationing of coffee. We also exxpect that within a short time we shall get greatly increased allowances of sugar."

Democracy vs. Bureaucracy

In the above we have sounded the tocsin against a development which is un-American.

The democratic system provides the highest form of freedom yet devised by man. It has made America a great, virile nation.

Bureaucracy is a menace—stultifying freedom.

MENE, MENE, TEKEL, UPHARSIN!

LAMBORN & COMPANY, INC.

October 22, 1943.

Official Release

(Sugar Machinery and Equipment)

PART 1226—GENERAL INDUSTRIAL EQUIPMENT

(Lmitation Order L-292, Schedule V)

Production Restrictions in Lieu of Quotas for Sugar Processing Machinery and Equipment

1226.81a *Restriction on production of sugar processing machinery and equipment.* (a) *Purpose of this schedule.* Since sugar processing machinery is on Schedule B of Order L-292, its production has been prohibited. Therefore, the quota provisions of paragraph (g) (2) of Order L-292 do not apply to sugar processing machinery and equipment. The purpose of this schedule is to permit the manufacture of a limited quantity of this machinery and equipment during the period November 29, 1943 to are in accordance with paragraph (g) (1) of Order September 30, 1944. These production restrictions L-292 which says that the War Production Board may at any time adopt schedules stating the number of units of food processing machinery of any kind that may be fabricated and assembled by any manufacturer. The provisions of this schedule take the place of the restrictions on manufacture contained in paragraph (c) of Schedule B of Order L-292 for sugar processing machinery and equipment.

(b) *Number of units which may be manufactured.* During the period beginning November 29, 1943, and ending September 30, 1944, each manufacturer may fabricate or assemble any sugar processing machinery or equipment necessary to fill orders actually received by him if the orders are of a kind which he is permitted to accept under ORDER L-292. In addition each manufacturer may fabricate or assemble the number of units of centrifugals and sugar sprayers necessary to maintain a maximum inventory of two units of centrifugals and three units of sugar sprayers. A manufacturer must not fabricate or assemble any sugar processing machinery or equipment other than centrifugals and sprayers for inventory.

(c) *Appliabiclity of Limitation Order* L-292. Except as otherwise indicated herein, this schedule is subject to all applicable provisions of Limitation Order L-292 as amended from time to time.

Issued this 29th day of November, 1943.

J. Joseph Whelan,
Recording Secretary.

Official Release

(Gifts of Sugar)

PART 1407—RATIONING OF FOOD AND FOOD PRODUCTS

Ration Order 3, Amendment 106

Sugar Rationing Regulations

A rationale accompanying this amendment has been issued simultaneously herewith and filed with the Division of the Federal Register.

Rationing Order No. 3 is amended in the following respect:

Section 1407.61 is amended to read as follows:

1407.61 *Prohibited deliveries.* After April 27, 1942, no person may deliver sugar to any consumer and no consumer may accept delivery of sugar from any person except upon giving up stamps, certificates, or coupons covering the amount of sugar delivered. However, a consumer who has obtained sugar by the use of his stamps, may give it to another consumer, without receiving stamps, certificates or coupons. He may similarly give such sugar to a religious, charitable, civic, or municipal organization as his agent, to give such sugar to another consumer without receiving stamps, coupons or certificates. (A transaction is not a gift if any charge is made.)

This amendment shall become effective December 8, 1943.

Chester Bowles
Administrator

Official Release

(Hawaiian Wage Rates)

Determination of fair and reasonable wage rates for persons employed in the production, cultivation, or harvesting of sugarcane in Hawaii during the calendar year 1943.

Pursuant to the provisions of subsection (b) of section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order 9334, issued April 19, 1943, the following determination is hereby issued:

Fair and reasonable wages rates for persons employed in the production, cultivation, or harvesting of sugarcane in Hawaii during the calendar year 1943. The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the production, cultivation or harvesting of sugarcane in Hawaii during the calendar year 1943, if all persons employed on the farm during that period in the production, cultivation or harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates not less than the following:

(a) *Wage rates during the period January* 1, 1943, *to June* 30, 1943. For all work performed during the period beginning January 1, 1943, and ending June 30, 1943, the average daily wage for each laborer for each pay period (including bonus payments) as provided in the determination for the calendar year 1942 (S. D. No. 131, issued April 24, 1942), or the rate paid or the rate agreed upon between the producer and the laborer whichever was highest.

(b) *Wage rates during the period July* 1, 1943, *to December* 31, 1943. For all work performed during the period beginning July 1, 1943, and ending December 31, 1943:

	Average daily wage for each laborer for each pay period (not exceeding 1 month) per 8-hour day
(1) *Harvesting operations; time basis.* Cutting, cutting and packing, packing, packing and fluming, fluming, piling, hand loading and hauling sugarcane, laying portable track, laying portable flumes, and other harvesting operations not elsewhere provided for:	
Adult male workers	$1.84
Adult female workers	1.38
(2) *Non-harvesting operations; time basis.* (i) Planting, cultivating, fertilizing, irrigating, brooming,[1] and other non-harvesting operations not elsewhere provided for:	
Adult male workers	1.61
Adult female workers	1.21
(ii) For work performed under long term cultivation and irrigation agreements, an advance of not less than:	
Adult male workers	1.72
Adult female workers	1.29

	Daily wage per 8-hour day
(3) *Children 14 to 16 years; time basis.* For all work listed under (1) and (2) with maximum time of employment in any one day not to exceed 8 hours (shorter days in proportion)	$1.15

	Cents per hour
(4) *Operators of mechanical equipment.*	
Tractor drivers, truck drivers, railroad brakemen	24.0
Operators of mechanical loading and harvesting equipment (other than tractors)	32.0
Railroad engineers	36.0
Railroad firemen and conductors	26.0

(5) *On a piece rate basis.* For all work performed on a piece rate basis, the piece rates shall be the rate agreed upon between the producer and the laborer but in no instance shall the average daily wage for each laborer for each pay period be less than the time rate described under this paragraph (b) for the applicable operations. Piece rates for the same operations shall be the same whether the work is performed by adult males, adult females, or children between 14 and 16 years of age.

(6) *Wage increases.* For each month during the period July 1, 1943, to December 31, 1943, both inclusive, the straight time earning of employees who are covered in this determination shall be increased by one and one-half percent for each one dollar increase in the price of sugar above $65.00 per ton. For purposes of determining the amount of increase, the average New York daily (including Sundays and Holidays) market price per ton of 96° sugar, Hawaiian basis, for the period beginning with the 16th day of the preceeding calendar month and ending with the 15th day of the current calendar month, shall be used. These increases shall be applied to the earnings after the wage rates as outlined under subparagraphs (1) to (5), inclusive, have been complied with.

(c) *Annual average payments for the calendar year* 1943. Subject to the provisions of paragraphs (a) and (b), the annual average payment on each farm for all adult workers; excluding operators of mechanical equipment and workers who are paid a monthly salary of $100 or more shall be:

	Per 8-hour day
(1) For work performed in harvesting operations	$2.15
(2) For work performed in non-harvesting operations	1.61

In calculating the annual averages the earnings of adult females shall be given a weight of four-thirds.

(d) *General provisions.* (1) The wage increase provisions of this determination may, upon appeal to the War Food Administrator, be modified as to any producer who is able to establish that the payment of such increases, or any part thereof, will, under present wartime conditions, work an undue hardship on such producer, or seriously impede the production of sugarcane on the farm.

(2) If the producer and laborer agree upon a wage for any operation, or combination of operations, higher than that prescribed in this determination, payment in full of the amount agreed upon must be made to qualify the producer for payment.

(3) In addition to the foregoing wages of this determination, the producer shall furnish the laborer, without charge, the perquisites customarily furnished by him, such as a house, garden plot, and similar incidentals, unless the furnishing of such is restricted by military authority.

(4) The producer shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined above.

Issued this 25th day of June 1943.

JESSE W. TAPP,
Acting War Food Administrator.

[1] So-called brooming done directly in connection with the operation of mechanical harvesting equipment shall be considered as covered under subparagraph (1). Other brooming is considered as non-harvesting for the purpose of this determination.

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THE SUGAR BULLETIN

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A letter from the A. A. A. Regarding Determination of Normal Yield and Eligibility for Abandonment and Deficiency Payments

December 22, 1943.

To: Parish Administrative Officers and County Committeemen in Sugarcane Parishes

Subject: Determination of Normal Yield and Eligibility for Abandonment and Crop Deficiency Payments

This is in further reference to 1943 Sugar Letter No. 14, Determination of Normal Yield and Eligibility for Abandonment and Deficiency Payments.

In order that the provisions of the Determination may be carried out, the County Committee will proceed at once to determine the "local producing areas" within its parish. A local producing area is defined as "all contiguous farms which are found by the Parish or County Agricultural Conservation Committee of the Agricultural Adjustment Agency in which the farm is located to be similar with respect to *types of soil* or with respect to *topography*".

The first step to take in arriving at the "local producing areas" within the parish will be to divide the parish into large areas which are separated by natural barriers such as the Mississippi River, swamps, lakes, woodlands, grazing lands, or large areas of farmland growing crops other than sugarcane. The boundaries of each such area shall be definitely determined and outlined on the parish map or photograph.

The second step will be to break down the large areas determined in paragraph 1 into "local producing areas". Within each large area there may be smaller areas in which there are farms of the same soil type, but which are separated from each other by lakes or strips of swamp or woodland. There may be contiguous farms in the same area, not separated from each other, but which have distinctly different soil types. In either of these cases all contiguous farms falling into either category should be included in a different "local producing area". Once defined all such areas should be designated on the parish map or photograph.

In order to make the system uniform in all sugar producing parishes, large areas separated by natural barriers, as defined in paragraph 1 should be designated by the capital letters R., S., T., U., etc. and the "local producing areas within the large areas as R1, R2, S1, S2, S3, etc.

A list of all farms, headed "List of Farms in Local Producing Areas of .....Parish", will be prepared in triplicate. This list will show

(1) the sugarcane farm serial number, (2) the name of the operator, and (3) the 1943 planted acres of sugarcane for sugar. Farm serial numbers will be listed in numerical order by wards; planted acres will be that shown in Column B, line 7, Section II, Form SC-515. The original and one copy, signed by a member of the County Committee, will be sent to the State Office, and one copy will be retained in the Parish Office. For the sake of uniformity "Sugarcane Marketing Lists", the headings changed to conform with these instructions, should be used.

Eligibility for abandonment and deficiency payments will be determined first in accordance with the procedure followed in 1942. In the event the entire parish does not qualify for abandonment and deficiency payments, then steps will be taken to determine eligibility for each local producing area.

Signed A. C. Smith
Administrative Officer in Charge

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
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Sugarcane Cost Accounting

By Emile A. Maier
(Louisiana Sugarcane Technologists' Assn.)

The Louisiana Sugarcane Industry has always been noted for the named Plantations which express the individuality of the owners and the managers. This rugged individualism has been the backbone of our country and is necessary for our American way of life. However, when we attempt to compare costs of various operations connected with the growing of Sugarcane, this highly desirable trait has annoying disadvantages. The following report is an attempt to point out a workable system of records which will appeal to the owner of one plantation as well as to the corporation which has a number of plantations grouped in units at different points. Every effort has been made to keep details at a minimum and still retain those parts which are necessary for a complete picture.

Data for this study have been obtained from many companies and individuals and is a composite of many systems. Because of the complexity of the task, no attempt will be made to give credit to the origin of the component parts. The author hopes that no slight will be felt by any one of the many individuals who rendered such valuable assistance.

The start, of course, is in the field, with the taking of the workers' time by the Overseer or Timekeeper. For Cost Accounting the following data is necessary: The worker's rate, his job and how long he worked at that job. It would be an excellent idea to have an additional record of the total number of hours applied to each operation as well as the total amount of money spent.

Time Book Week Ending_____194____

No.	Names	Wed.		Thu.		Fri.		Sat.		Sun.		Mon.		Tue.		Rate

This sample is taken from a Time Book which measures 8½ by 9⅜ when opened, and has space per double page for two weeks' time for six workers or one week's time for twelve workers. This Time Book has a paper cover which contains all of the account names and numbers under the different headings, as

CULTIVATION COSTS—DIRECT
111 Implement Cultivation
112 Hoeing
113 Quarter Drains

This Time Book Form dates back to the time when a work day was divided into quarters but can be readily used today by putting in the number of hours and the account numbers, as a man would seldom work at more than four separate accounts in any one day.

A daily distribution is then made which shows the Plantation name, date, account numbers and names with the total amount expended for each day, and a grand total which may be checked with the payroll. This slip could be signed by the person responsible and forms the original record. It is the basis for the entire system.

The daily record may then be entered as a Payroll Distribution sheet which would cover half a month.

_____Plantation
PAYROLL DISTRIBUTION From_____to_____

Date						
Acct. No.	Nature of Work	Amount	Amount	(for 16 columns)	Total	Remarks

A distribution sheet is also made for materials, handling and other changes. Entries are then made from these Distribution Sheets to the Ledger which will then have the complete record.

The Agricultural Operating Report is the backbone of the entire system. Inasmuch as the cane crop from planting of the crop to the completion of grinding covers more than a calendar year it is advisable to segregate the operations whenever possible, such as: Cane Planting (Fall Work—Next Cane Crop), and the addition of any Spring charges to the planting operation. Direct Cultivation Costs. Harvesting Costs. Indirect Field Costs, which include such items as Repairs to Roads and Bridges, Buildings and Fences, Implements, Tractors, and other items, which cannot readily be divided percentagewise to the separate operations. This covers the cane picture. The Corn, Legumes, Hay and other crops are handled separately during the year and credited or charged against the cane crop at the end of the year.

As much detail as is desired can be included in the Agricultural Report, such as the division of the cane crop into Plant, 1st Stubble, 2nd Stubble and 3rd Stubble; the segregation of corn grown alone and legumes grown alone from a joint account of Corn and Legumes. However, over a period of years the percentage of land in cane and the percentage of cane as plant cane tends to fall within narrow limits, and whether the money is spent for Legumes grown alone or Legumes grown with corn, all of the expense must be subtracted from the returns of the Cane Crop anyway. All of these details are excellent and it would be nice to have a very complete record down to the smallest item. Still the cost and the clerical help necessary to make such a complete record must be considered. A record of the acreages in Plant and Stubble as well as those in Legumes and Corn with Legumes will be made but only total charges against Cane and total charges against Corn and Legumes will be recorded.

For the purpose of having a more accurate comparison between the same periods of different years in an Agricultural Operating Report, it is advisable to have the reports on a semi-monthly basis. Since we usually start our Crop Year right "after Grinding", our reports can easily follow that pattern. This permits us to use the figures from the semi-monthly Payroll Distribution for our Agricultural Operating Report.

.....Plantation	Acres	Plant.....	Acres Corn Only.....
Agricultural Operating Report	"	1st Stub.....	Acres Corn & Leg.....
	"	2nd Stub.....	Acres Leg. Only.....
	"	3rd Stub.....	Acres Hay .....
Period ending.....	Total Cane.....		

	Acres	Budget		This Period		To Date	
		Amount	Per Acre	Amount	Per Acre	Amount	Per Acre
FALL WORK–CANE							
100 Fall Work							
101 Spring Preparation							
102 Spring Planting							
103 Gas and Lubricants							
Sub-Total							

This form can cover the operations on a single plantation or can be a composite of a number of plantations making up one unit. If desired a wide page can be used and the three columns, viz., Budget, This Period and To Date may be repeated as many times as there are plantations to compare. When a Budget is made out ahead of time it gives a goal to shoot at and usually assists in keeping costs in line. Naturally we are more interested in producing a cane crop than we are in staying within a budget, hence we should treat the Budget as a guide rather than as a limitation.

No. 100 Fall Work is the total cost of the fall work done the previous year which is a part of the expense of this crop. This account will be treated more fully later on.

Gas and Lubricants will be included in each operation under a different account number suitable to that operation. Many people feel that it is not possible to charge out accurately the amount of Gas and Lubricants used for the different operations. There is a great deal to be said for this viewpoint and possibly it is quite correct, still we are able to start out a tractor fully serviced and we may then charge the replacement of Gas and Lubricants to the operation that the tractor had just been used for. By charging this account separately we get a more complete cost for the operation and do not put quite as much under the blanket of Indirect charges. Conditions may be such that it is not possible to charge out Gas and Lubricants daily to each operation. We could then use a percentage of the Gas and Lubricants charge to apply to the accounts for the semi-monthly period. This procedure is possible with tractor, as a tractor only "eats" when it works.

CULTIVATION COSTS DIRECT	
111 Implement Cultivation	(These columns a continuation from FALL WORK
112 Hoeing	
113 Quarter Drains	
114 Ditching	
115 Ditch Banks	
116 Fertilizing-Material	
117 Fertilizing-Labor	
118 Gas and Lubricants	
119 Johnson and Wire Grass	
120 Borer Control	
121 Experimental and Research	
Sub-Total	
HARVESTING	
131 Labor Transportation	
132 Cutting	
133 Hauling and Loading	
134 Hoisting	
135 Windrowing	
136 Gas and Lubricants	
137 Board Absorbtion	
138 Repairs Harvesters-Labor	
139 Repairs Harvesters-Material	
Sub-Total	

Here we have a question "Should we or, Should we not?" charge repairs for Harvesting Machines and not for tractors and other implements used in harvesting. If we wish to compare our present harvesting costs with those of some years ago, we should add the additional costs incurred to compensate for the fewer laborers involved in the harvesting operation.

To preserve the continunity of the Agricultural Operating Report we will continue along with it and come back later to the subject of special Overseer's Cultivation Reports and Weekly Harvesting Reports.

INDIRECT FIELD COSTS	
801	Overseers
802	Blacksmiths
803	Repairs—Roads and Bridges
804	Repairs—Buildings and Fences
805	Repairs—Implements
806	Repairs—Tractors
807	Stable Labor
808	Stable Feed
809	Stable Exp. and Vet.
811	Welfare and Sanitation
812	Wood——Free Distribution
813	General Drainage
814	Yards and Grounds
815	Moving Labor
816	Accidents
817	Live Stock Losses
818	Water Supply
900	Division Overhead
	Sub-Total
	TOTAL COST THIS CROP

Division Overhead includes such items as Manager's Salary, Clerical Hire, Telephone, Light, Heat and Water, Postage, Traveling Expense, Stationery, Truck Driver and truck maintenance and such other items as are a part of the proper operation of a Plantation and may be divided percentagewise between the Field, Factory and/or other operations in which the particular property may be interested.

As there are many days during the year when the mules do not work, it is difficult to charge out Mule Feed accurately to the separate accounts. In this study, the Corn and Legume Crop will be credited with the amount harvested such as so many units at the average price per bushel of corn and the average price per ton of hay over a ten-year period of normal times. This would not take care of the violent price fluctuations during war periods but would per-

mit better comparisons between different years' operations. The cane crop must always absorb any loss on corn operations and any credit over expenses will look well in the profit column.

For special reports it may prove possible to use a percentage of the Indirect Field Costs to apply to Cane Cultivation, Harvesting, etc. At the end of the year the total cost will be divided among the total tons of cane sold.

No account has been set up for Miscellaneous. If one is set up it should be used only on rare occasions as such an account usually catches too much. Any expenditure made should be justified with a proper designation.

	CORN AND LEGUMES
220	Fall Work
221	Preparation
222	Planting
223	Cultivation
224	Seed
225	Fertilizer
226	Ditching
227	Ditch Banks
228	Quarter Drains
229	Gas and Lubricants
230	Harvesting Corn
231	Harvesting Legume Hay
	Total Cost Corn and Legume
240	Credit for Corn Harvested—Bu.
241	Credit for Leg. Hay Tons
242	Credit for Legumes Plowed Under
	Net Result Corn and Legume Crop

No. 242 Credit for Legumes Plowed Under may be met with a formula such as the following:

Charge these Costs	220	Fall Work—Corn and Legume
	221	Preparation
	222	Half of Planting
	224	Legume Seed
	226	Ditching
	227	Ditch Banks
	228	Quarter Drains
	229	Gas and Lube
	230	Harvesting Legume Hay

From the total of these costs subtract the Credit for Legume Hay Harvested, and charge balance to Acct. No. 151, Legume Fertilizer Next Cane Crop.

	ALFALFA HAY
340	Fall Work
341	Preparation and Planting
342	Seed
343	Fertilizer
344	Gas and Lubricants
345	Harvesting Hay
	Total Cost Alfalfa Hay
346	Credit for Hay Harvested
	Net result Alfalfa Hay Crop

	TRUCK CROPS
695	Labor
696	Seed
697	Credit for Vegetables

An account for Potatoes or any other specialized crop can be added to the Agricultural Operating Report as needed.

	FALL WORK—NEXT CANE CROP
151	Legume Fertilizer
152	Plowing and Preparation
153	Planting
154	Quarter Drains
155	Seed Cane
156	Windrowing Seed Cane
157	Gas and Lubricants
158	Ditching
159	Ditch Banks
160	Cultivation
161	Hoeing
162	Planting Winter Legume
	Total Cost Fall Work—Next Cane Crop

Now just how shall we charge seed cane? This charge amounts to from 6% to 10% of the acreage of cane grown, to produce less than half of the acreage for the next crop. Since we now have our records of Field Costs right up to date and are about to go into the grinding, we can divide our total cost for this cane crop by the number of acres in cane and apply this cost per acre for the number of acres of cane used for seed. Should this look pretty high, it just means that we should pay a little more attention to this item of cost. We may find it necessary to add a certain percentage of the Indirect cost to round out a full year's operation. As an alternative we could charge out a definite sum per acre for seed cane each year just as we credit so much per bushel of corn, a figure based on a ten-year average. We would credit the present crop with the seed used and charge next year's crop.

	FALL WORK—NEXT CORN AND LEGUME CROP
211	Capping Off
212	Drains
213	Gas and Lubricants
214	Ditching
215	Ditch Banks
216	Clearing Land
	Total Cost Fall Work— Corn and Legume Crop

	FALL WORK—NEXT ALFALFA CROP
231	Preparation and Planting
232	Seed
233	Gas and Lubricants
	Total Cost Fall Work— Next Alfalfa Crop

(Space for) REMARKS and our Agricultural Operating Report is complete.

During grinding it is advisable to have a Weekly Harvesting Report which would give Cost and Statistical Data every seven days instead of twice a month, and permit the progress of Harvesting to be followed more closely. It covers the following:

.....Plantation

Harvesting Report

Week Ending	Tons Harvested		Total Cost		Cost per Ton	
	This Week	To Date	This Week	To Date	This Week	To Date
Cutting						
Hauling & Loading						
Weighing & Hoisting						
Windrowing						
Total All Cane						

Cane Cut Unhauled on field Acres..... Tons.....

	Acres	Tons	Tons/Acre
Used and reserved for seed			
Harvested to date			
Remaining in Fields: Standing			
Remaining in Fields: Windrowed			
Total Crop			
Cane Harvested			
This Week			
Previously			
To Date			

During the cultivation season a special Overseer's report covering accounts selected from Cane Direct and Corn & Legumes can be readily made from the Agricultural Operating Reports. These would show the Total Amount and Per Acre Cost Budgeted, as well as the Total Amount and Per Acre Cost spent To Date. These reports sent to the Overseers regularly during the Cultivating Season and similar reports covering Harvesting Operations sent during the Harvesting Season always serve to stimulate interest and usually result in better work.

To complete the picture of the Field Operations, such items as Taxes, Insurance, Land Rentals, and Depreciation must be added to the Total Cost shown on the Agricultural Operating Report. The sum obtained less credits for such items as Seed Cane Sold, or any other items which have not been credited during the year, will give the net cost of the crop.

This study does not attempt to lay out a complete accounting system. It is an effort to offer the thought of unification to the Sugarcane Industry of Louisiana. At the present time, when a cost comparison is made between the records of different companies it is first necessary to find out just what costs are included in each record. To be able to compare costs: we need first a uniform list of accounts; second, a uniform definition of those accounts; and, third, a uniform grouping of those accounts.

Conditions in our industry have undergone such rapid changes in the last few years due to new varieties of canes being grown, the mechanization of cultivation work, the introduction of mechanical cane cutters and harvesters, and the handling by tractors of the cane that it has been difficult for the accounting records to keep up with these changes and this paper is presented with the hope that it covers the present methods of cultivation and harvesting. I feel that this society should consider an appointment by the Chairman of this Section of a standing committee on Sugarcane Cost Accounting, to draw up a uniform system of accounts and reports that would meet the needs of the Sugarcane Industry of Louisiana.

Official Release

(1943 Proportionate Shares for U. S. Beet Farms)

Determination of proportionate shares for farms in the domestic beet sugar area for the 1943 crop.

Pursuant to the provisions of section 302 (a) of the Sugar Act of 1937, as amended, the following determination is hereby issued:

Determination of proportionate shares for farms in the domestic beet sugar area for the 1943 crop. The proportionate share for the 1943 crop for each farm in the domestic beet sugar area shall be the number of acres of sugar beets planted thereon for the production of sugar beets to be marketed (or processed by the producer) for the extraction of sugar or liquid sugar during the 1943 crop season.

Issued this 17th day of November 1943.

(Seal) ASHLEY SELLERS,
Assistant War Food Administrator.

Official Release

(1943 Fair and Reasonable Prices for Florida Sugarcane)

Determination of fair and reasonable prices for the 1943 crop of Florida sugarcane for sugar.

Pursuant to section 301 (d) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Fair and reasonable prices for the 1943 crop of Florida sugarcane for sugar.—Fair and reasonable prices for the 1943 crop of Florida sugarcane for sugar shall not be less than those provided for in Sugar Determination No. 151 (Revision 1), issued May 20, 1943. The price basis for sugar shall be determined in accordance with whichever of the following options may be agreed upon: (1) the average price per pound of 96° raw sugar, duty-paid at New York, less .17 cent (plus transportation tax on such amount payable under section 620 of the Revenue Act of 1942) per pound to adjust for the appropriate freight differential for the week in which such sugarcane is delivered, or (2) the average price per pounds of 96° raw sugar, duty-paid at New York less .17 cent (plus transportation tax on such amount payable under section 620 of the Revenue Act of 1942) per pound to adjust for the appropriate freight differential for the period beginning October 15, 1943, and ending May 31, 1944, except that, if such prices do not give full effect to orders or regulations of the Federal Government pertaining to the establishment of a price for 96° raw sugar, duty-paid basis at New York, the Chief of the Sugar Branch may substitute such prices as will give effect to any such orders or regulations, and except, further, that if through any orders or regulations of the Federal Government the existing relationship between the price of 96° raw sugar, duty-paid basis, between New York City and Savannah, Georgia, should be changed, the price at Savannah, Georgia, except for the differential existing on October 15, 1942, shall be governing.

Issued this 13th day of November, 1943.

ASHLEY SELLERS,
Assistant War Food Administrator.

Official Release

(Pacific Coast Raw Sugar Prices)

Amdt. 3 to RPS 16—Raw Cane Sugars

In an action clarifying its regulation controlling the prices of raw cane sugar, the Office of Price Administration recently announced that it would recognize as legal contracts made for sales of that commodity from offshore producing areas to United States Pacific ports at $3.54 a hundredweight, 20 cents below the $3.74 maximum price stated in the regulation.

The provisions of this regulation call for sales on the West Coast at a "customary deduction." The matter of what constitutes a customary deduction is under discussion and OPA hopes to meet shortly with the industry on the matter.

OPA does consider the "customary deduction" as not greater than 20 cents per hundred pounds and this action makes it unnecessary for sellers to submit this deduction to the OPA for further approval.

No maximum price change is involved in the recent action, which will cut down the number of applications for approval.

(*Amendment 3 to Revised Price Schedule No. 16—Raw Cane Sugars—effective December 23, 1943.*)

REGULATION

(Document No. 25510)

Part 1334—Sugar, Confectionery, and Soft Drinks

(RPS 16,[1] Amdt. 3)

Raw Cane Sugars

A statement of the considerations involved in the issuance of this amendment has been issued simultaneously herewith and has been filed with the Division of the Federal Register.*

Revised Price Schedule 16 is amended in the following respect:

1. Section 1334.9 (a) (4) is amended by adding thereto the following:

Sales at 3.54 cents or less, and sales upon the same terms as previously approved for a term contract under subparagraph (6), may be made without submission for specific approval.

This amendment shall become effective December 23, 1943.

(56 Stat. 23, 765; Pub. Law 151, 78th Cong.; E.O. 9250, 7 F.R. 7871; E.O. 9328, 8 F.R. 4681)

Issued this 17th day of December, 1943.

CHESTER BOWLES,
Administrator.

*Copies may be obtained from the Office of Price Administration.

[1] 7 F.R. 1239, 2133, 2132, 8948; 8 F.R. 6842.

Official Release

(Sugar Statistics for the First 10 Months of 1943)

Distribution of sugar by the primary distributors in the United States during January-October, 1943, as compared with the corresponding period of 1942, was as follows:

	1943 (short tons, raw value)	1942
Refiners' raw sugar (table 1)	13,144	4,149
Refiners' refined sugar (table 2)	3,863,935	2,952,843
Beet sugar processors (table 2)	1,346,080	1,477,811
Importers' direct-consumption sugar sugar (table 3)	430,398	429,228
Mainland cane mills' direct consumption sugar (table 4)	92,804	56,443
Total	5,746,361	4,920,474
Deliveries for export[1]	389,507	165,674
Distribution for consumption in continental United States	5,356,854	4,754,800

The distribution of sugar for local consumption in Puerto Rico during January-October, 1943, was 80,641 tons and for the Territory of Hawaii, 51,035 tons. (Table 5).

Stocks of sugar on hand October 31 were as follows:[2]

	1943 (short tons, raw value)	1942
Refiners' raw	354,102	112,238
Refiners' refiued	158,933	202,392
Beet sugar processors	466,352	563,132
Importers' direct-consumption sugar	102,569	50,225
Mainland cane factories	20,302	25,297
Total	1,102,258	953,284

[1]Department of Commerce data on actual exports not available for publication. Deliveries for export exceed actual exports since they include the stocks held against commitments for our allies.

[2]Not including raws for processing held by importers other than refiners, nor raws held by refiuers but not yet reported by them on Form SS-15A, which amounted to 37,810 short tons, commercial value, in 1943, and 46,086 short tons, commercial value, in 1942.

Sugar Statistical Reports

Vol. 10, No. 10—January-October, 1943

Table 1

Raw sugar: Refiners' stocks, receipts, meltings and deliveries for direct consumption for January-October, 1943 (short tons, raw value):

Source of supply	Stocks on Jan.1,'43	Receipts	Meltings	Deliveries for direct consumption	Lost by fire	Stocks on Oct.31,'43
Cuba	152,272	2,434,254	2,363,440	4,079	271	218,736*
Hawaii	17,697	740,657	684,107	1,890	79	72,318
Puerto Rico	83 434	443,764	490,108	2,098	0	34,992
Philippines	4 407	0	4,217	0	1	189
Continental caue	91,716	120,778	188,006	5,076	8	19,404
Virgin Islands	0	2,888	2,731	0	10	147
Other countries	10,289	69,620	71,562	1	30	8,316
Miscellaneous (sweepings, etc.)	0	113	113	0	0	0
Total	359,815	3,812,074	3,804,284	13,144	359	354,102

Compiled from reports submitted by sugar refineries on Form SS-15A.

*Includes 64,531 tons in customs' custody.

Table 2

Stocks, production, and deliveries of cane and beet sugar by United States refiners and processors, January-October, 1943 (short tons, raw value):

	Domestic Beet Refineries[1]	Factories
Stocks of refined, Jan. 1, 1943	270,605	1,292,728
Production	3,752,263	2,519,704
Deliveries	3,863,935	1,346,080
Stock of refined, Oct. 31, 1943	158,933	466,352

Compiled from reports submitted on Form SS-16A and SS-11C by the sugar refineries and beet sugar factories.

[1]The refineries' figures are converted to raw value by using the factor 1.063308 which is the ratio of meltings of raw sugar to refined sugar produced during the years 1941 and 1942.

*Larger than actual deliveries by a small amount representing losses in reprocessing, etc.

Table 3

Stocks, receipts, and deliveries of direct-consumption sugar from specified areas, January-October, 1943, (short tons, raw value):

Source of supply	Stocks on Jan.1,1943	Receipts	Deliveries or usage	Stocks on Oct.31,1943
Cuba	68,583	341,675	324,212	86,046*
Hawaii	0	0	0	0
Puerto Rico	6,791	90,643	80,911	16,523
Philippines	2,816	6	2,822	0
Other foreign areas	499	21,954	22,453	0
Total	78,689	454,278	430,398	102,569

Compiled from reports and information submitted by importers and distributors of direct-consumption sugar on Forms SS-15B and SS-3.

*—Includes 12,082 tons in customs' custody

Table 4

Mainland cane mills' stocks, production, and deliveries, January-October, 1943, (short tons, raw value):

Jan. 1,1943	Production	Deliveries For direct consumption	Deliveries For further processing	Stocks on Oct 31, 1943
134,393	100,768	92,804	122,055	20,302

Table 5

Distribution of sugar for local consumption in Puerto Rico and the Territory of Hawaii, January-October, 1943, (short tons, raw value):

Puerto Rico	80,641
Hawaii	51,035

Food at War

(By A. W. Dykers)

Food will win the War. This is an unanimous opinion of the experts in Washington. The following comments on the food situation have been gleaned from reports appearing in the press.

No Pickups

Bakers and grocers will be held equally responsible in case of violation of food distribution order number one which forbids picking up day-old bread and other left-over bakery products. This warning was sounded recently by Mr. G. Chester Freemen, state supervisor for the food distribution administration, at a meeting of bakers held in New Orleans. Food distribution order number one is a war regulation designed to conserve vital ingredients used in bakery products such as sugar, flour, butter, eggs, and milk.

Rabbit Ceiling

No meat points are needed by the housewife when buying rabbit meat but the O. P. A. has taken Flopsy, Mopsy, Cotton Tail, and Peter under its protective wing just the same. Ceiling prices were recently announced on rabbit meat and a wild rabbit drawn, with head, feet and skin on is not supposed to cost more than 40 cents. Dressed rabbits, except the wild variety, should cost no more than 44 cents a pound wholesale or 55 cents a pound retail while live white rabbits sold for food are not to bring more than 24 cents a pound. The price for live colored rabbits has been fixed at 22 cents a pound. The news item from which this information was learned states that most rabbits sold in the New Orleans market are wild rabbits shot in Kansas and Missouri. The demand this year is said to far exceed the supply because of a shortage of ammunition for the hunters and the heavy public demand for nonrationed meat.

Ration Free Shoes

The O. P. A. has eased its shoe import regulations and consumers now can get shoes made outside this country ration-free, either as gifts from civilians or soldiers abroad or as personal imports. It is stated that the collectors of customs will release such shoes ration-free, although not more than two pairs may be released to the same person in the same transaction.

Pork Chop Dividend

The O. P. A. has declared a pork dividend. In an order effective at midnight on December 21st spare ration stamp number one in ration book number four became good for an extra five points in the purchase of pork. The *Associated Press* despatch in the New Orleans *Time-Picayune* from which this report was taken stated that the dividend was declared in an effort to easy the rapidly mounting pressure on the markets and storage facilities for both live and slaughtered hogs. The O. P. A. said the temporary validation of a special stamp for extra pork provided the simplest and most effective manner of getting the unexpectedly large civilian supply of pork into the hands of the housewife. The extra points are good only until midnight on Sunday, January 2nd. In the same dispatch the O. P. A. reported that surveys indicate the average person spends between 11 and 12 of his 16 weekly ration points for meat. This leaves only four or five points a week for butter, cheese, and other fats.

Down 1.4 per cent

A decline in retail food costs of 1.4 per cent from mid-October to mid-November in the New Orleans area was reported recently by the Dallas regional office of the United States Bureau of Labor Statistics. A review of the price situation, according to a recent report in the *Times-Picayune,* showed that during the month meat declined 1.3 per cent, fruits and vegetables 5.1 per cent, and dairy products, fats and oils a fraction of a per cent. Eggs went up 0.6 per cent, while sugar and other sweets remained unchanged.

Peanut Record

The United States Department of Agriculture has announced that 2,561,620,000 pounds of peanuts were produced this season for the largest production on record. The final production, while lower than early season estimates, is still about 16 per cent greater than any other peanut production on record. Acreage well above that of last year was planted in each of the three major producing areas although the increase in the Virginia-Carolina area was smaller than in the Southeast and Southwest peanut producing sections.

Pay For Fats

The O. P. A.'s new program of paying brown ration stamps for salvaged kitchen fats went into effect on December 13th. Retailers are giving one brown ration point for each half pound of salvaged fats turned in to them plus the payment of 4 cents a pound. This points-for-fats program is intended to spur collection of fats needed for the manufacture of glycerine and sulfa drugs. The public schools are also assisting in the collection.

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THE SUGAR BULLETIN

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We stand for the encouragement of Home Industries as against foreign Competition

Vol. 22 NEW ORLEANS, LA., JANUARY 15, 1944 No. 8

Payments on Salvaged Cane

The War Food Administration announced January 8th that Louisiana producers of sugarcane that may be salvaged from recent freeze damage to the 1943 crop will be eligible for the 33-cents-a-ton payment by the Commodity Credit Corporation—under the program announced last August for the purpose of maintaining production at a high wartime level.

The Louisiana crop of cane for sugar and seed had been estimated as of December 1 at 5,914,000 tons. A freeze on December 16 damaged approximately 370,000 tons, of which it is expected that 100,000 tons will be processed as salvage cane. The WFA offer to apply the 33-cent payment to the salvage cane on an actual 2,000 pounds-to-the-ton basis (as well as to the crop classified as "standard sugarcane") is effective on cane harvested after January 8 and accepted by processors on the established salvage basis.

WFA officials said the payment would induce producers to salvage cane that otherwise would be lost. Production of sugar and molasses would be correspondingly increased at a time when maximum production is required for civilian and military needs.

* * * * * *

The above announcement has undoubtedly been of considerable relief to sugarcane growers, principally those in the Western Division of the Sugar Belt whose harvesting operations have been delayed and prolonged to a much greater extent than the growers in the Eastern Division. However, the announcement has significance and interest for all growers because it marks a new policy on the part of the War Food Administration whereby growers are given insurance against complete loss of any part of their crop, regardless of the amount of sugar recoverable and despite the fact that the condition of the cane definitely renders it subject to the salvage formula in the sugarcane purchase contracts. Such insurance is an encouragement and a safeguard for the grower, which is justified by the need for a maximum production of sugar and molasses in the war effort.

(C. J. Bourg)

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The American Cane Growers' Assn.
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Prospects for 1944 Sugar Program Indicated

By C. J. Bourg

When the proposal to extend the CCC until February 17th was before the Senate, some assurances were demanded that the CCC would not start any new programs before February 17th. A letter was written by J. B. Hutson containing a statement on programs of the CCC (*Congressional Record* of December 18, 1943, page 10983). Each product was discussed separately, with the following on sugar:

Sugar

"Prices to domestic sugar beet growers for the 1943 crop are being supported at about $1.50 per ton above the returns which producers obtained from present sugar prices and payments under the Sugar Act. This increased returned is being absorbed as a loss by the Commodity Credit Corporation under contracts which have been made with sugar beet processors. A similar increase of 33 cents per ton to Louisiana sugarcane growers is also paid by the Commodity Credit Corporation. In addition, the Corporation is absorbing certain wartime increases in ocean freight and insurance, handling charges, and internal rail transportation on sugar, in order to permit foreign and offshore domestic sugar to be sold at existing ceiling prices. For the 1943 crop the losses under this program are estimated at $50,000,000. An increase of about 1 cent per pound in sugar prices at retail would be necessary in order to eliminate these losses. This would amount to about $100,000,000 on the quantity of sugar consumed by civilians, both directly and in manufactured products. In addition, there would be an increase of about $20,000,000 in the cost of sugar used for the armed forces and other governmental purposes. *For the 1944 crop it is probable that a somewhat greater price increase would be necessary in order to reflect an adequate return to sugar beet and sugarcane farmers.*"

War Food Administrator Marvin Jones has under consideration a tentative announcement which would cover the sugar program and the programs of competing crops (like beans and potatoes in the beet area).

Official Release

(Changes in Refined Sugar Zones)

Increased amounts of sugar required for shipment overseas under lend-lease from the New York and Philadelphia refinery areas are provided through changes in the territories which refinery centers now serve, the Office of Price Administration announced recently.

The changes will increase supplies at shipping points by reducing the civilian territory formerly served by the New York and Philadelphia refineries. Boston refineries will now serve part of this territory, and in addition sugar will be moved in from the Gulf area where supplies have improved considerably.

Lend-lease commitments are expected to reach their peak during January, but will in no way affect previously-announced civilian allocations.

Details of the changes, which go into effect immediately, are as follows:

1. *Boston.* The area served by these refineries is expanded to include all of Connecticut, except Fairfield County. This state was formerly served both from New York and Boston. Fairfield County, located in the southwest corner of the state, adjacent to New York, will be served from that city.

2. *New York.* Since refiners in this center will supply the greater part of lend-lease requirements, they will, for the time being, serve a much smaller civilian territory. It will now consist of Zone 2 (New York, northern New Jersey and Fairfield County, Connecticut). Refiners will withdraw from Zone 3 A (Ohio, eastern Indiana, and four counties in West Virginia) and from Zone 10 (the lower Michigan peninsula).

3. *Philadelphia.* Refiners in this center will supply part of lend-lease requirements and will accordingly serve a smaller civilian territory. Zone 3, the reduced area, will now consist of Pennsylvania, Delaware, and the southern half of New Jersey. Like the New York refiners, those in Philadelphia are withdrawn from Zones 3A and 10.

Raw sugar at Philadelphia is somewhat limited by transportation difficulties encountered in moving sugar by rail from southern ports. It is expected that the proposed plans of the War Shipping Administration to move raw sugar to Philadelphia by steamer will substantially improve this supply situation.

4. *Savannah.* Stocks of sugar at this refinery are adequate to serve a larger territory than formerly. It is therefore expanded to include southern North Carolina, now made part of Zone 6, and Zone 8A, Tennessee and eastern Kentucky which will continue to be served by New Orleans.

5. *New Orleans.* This center is well stocked with sugar, largely because of the harvesting at this time of year of the mainland sugarcane crop. Its territory is therefore expanded to include Zones 3A and 10, formerly served by New York and Philadelphia. (Zones 3A and 10 are described in paragraph 2, above.)

Arrangements have been made by OPA whereby the Commodity Credit Corporation will reimburse New Orleans refiners for excess inland freight costs involved in serving certain parts of their new territory.

6. *Sugarland, Texas.* Stocks at this refinery are sufficient so that its territory is expanded to include western part of Texas, which will also continue to be supplied with western beet sugars and with cane sugars refined on the Pacific Coast.

Program of Sugarcane Production for South Louisiana

(*L. S. U. Agricultural Extension Circular No.* 151, *Revised*)

Cultivation—Early Work

When we begin to cultivate our crops, the first operation consists in wrapping the middles. This can be done at the will of the planter. It should be done deeply and thoroughly because we are rapidly approaching the time when no more plowing should be allowed. But the off-bar furrow should not be run until the cane has already shown that it is approaching the stage when we can expect it to come up to a stand. This is particularly true in the case of stubble canes. It is true because in running the off-bar furrow the greater portions of the old root system is pruned. Experiments have shown conclusively that this old root system functions in feeding the young cane until it has established its own root system, and for that reason, as much of it as is possible should be left intact as late in the season as is practicable. In many instances, even before wrapping the middles of stubble, it is well to sink the old middles deeply. After a wet harvest when the wagon wheels have driven quantities of cane flags into the ground, this is a particular good practice because the plow brings those old tops into contact with air and hastens their decomposition. The use of the plant cane scraper or the stubble shaver is optional. These are two implements capable of doing good work and of saving much money when properly used. Neither of them should be used as a habit. On the other hand, they should be employed judiciously and intelligently. If the plant cane scraper is used after much of the cane has come up, the scraper will undoubtedly break many of the young canes back to the mother stalk. And while germination will come again from such broken canes, it will be delayed and often is delayed until after so much soil has been brought back to the drill that these weaklings never see daylight. The stubble shaver should never be used until after a thorough examination to determine the condition of the eyes on the root stock. If examination shows the eyes on the lower end of the root stock to be good, then there is no danger of losing a stand by shaving stubble. On the other hand, if the winter has been such as to cause the lower end of the root stock to die, shaving of the upper eyes may destroy from one-third to one-half of the good eyes remaining, and may result in gappy stands.

The sled-type shaver is not well suited to the new varieties of cane which we are now growing. It tends to split the stubbles and even pull them out of the ground. The opposing disc and the newly developed single disc, when kept in good mechanical condition, and particularly when power driven, makes a clean cut with but little damage. In using a mechanical scraper on plant cane this operation has to be planned for by covering the seed cane to a depth of four inches. Where seed cane is covered only two inches, it would hardly be possible to run the scraper without doing serious damage to the seed cane. After running the mechanical scraper, all fields should be examined to see that no portion of them has been left with the cane too deeply covered. In fact, it is a good practice to run a hoe gang behind a scraper to cover exposed seed cane as well as to remove extra soil where the seed cane has been left covered to too great a depth. Not more than two inches of soil should be left after this operation. Much of the unsatisfactory stands, in the case of C.P. 28-19, C.P. 29-320 and Co. 281, are due to improper removal of excess soil in the early spring.

Stubble Digger

The stubble digger is a tool which can be dispensed with, especially in the case of very favorable weather conditions. When used should be run early in the season to spade the soil around the stubble before germination has developed to any considerable extent. If this tool is run over cane which is germinating freely, it will break many of the young sprouts; whereas, if it is run early, it will save much hand work and insure earlier germination of the stubble crop. The matter of following the stubble digger with a hoe gang is purely optional. In the case of a late spring it is usually a very profitable procedure.

Fertilization

When the cane has come up to a stand, we are ready to apply fertilizers, and in this operation we prefer to so set the spouts of the distributor as to distribute the fertilizer against the sides of the middle rather than around the cane shoots and in the bar furrow. Our object in doing this is to insure a mixture of fertilizer with the portion of the soil which will come in contact with the young roots at an early stage. If the fertilizer is distributed along the edge of the middles, it will be mixed into the soil when these middles are reversed.

In reversing the middles we should recognize that this will be our last chance to use heavy plows. The middles should be broken as deeply as is possible and then all forms of plows returned to the tool shed to stay until the following fall.

Later Cultivation

If soil preparation has been good and the middles thoroughly broken, the object of cultivation from this stage on is to suppress weed growth and maintain tilth. Deep plowing during the process of late cultivation should be avoided. Soil should not be returned to the young plants until germination has insured the desired stand. Great care should be exercised

in the cultivation of slow suckering varieties; therefore, no dirt should be put to these canes until all suckers that are wanted are out. Many stands have been completely ruined by too early dirting. In our experience, the spring tooth cultivator which can be made to cover a six-foot row at one operation is the ideal tool for the first, and often the second cultivation. A hinged drag harrow made to straddle the cane has also proven a very good implement. After this, cultivation around the cane should be done with a disc cultivator so set that it will cut a minimum number of roots and one of the shovel type middle cultivators should be used to complete the job. Here again it pays to reverse the ordinary plan of procedure by running the middle cultivator in front of the disc cultivator. This is true because the middle cultivator can be made to throw loose dirt on the side of the row to be picked up by the disc cultivator and carried into the drill without going deep enough to prune roots. Root pruning is the most destructive agency with which we have to contend. Root pruning not only minimizes tonnage but retards growth, thereby delaying maturity. Stubbs in Bulletin No. 66, page 797, shows conclusively that practices which prune roots reduce sugar yields; whereas practices which preserve roots increase sugar yields. Tests at the University Station continued to confirm Stubb's findings.

Disease Control

Definite seed plots of all varieties expected to be planted during the next planting season should be set aside and should receive extra good treatment.

These selected seed plots should be kept in a vigorous growing condition by ample fertilization and especially good cultivation. The plots should be rogued of all mosaic or chlorotic streak diseased stools of either or both diseases if they occur together. Should appreciable sugarcane borer injury be anticipated the seed plots should be dusted with cryolite.

Official Release

(Raw Sugar Prices Reduced at Boston)

A reduction of two cents per 100 pounds has been effected in the maximum price for off-shore raw cane sugar delivered at the port of Boston, the Office of Price Administration has announced.

The Boston maximum price of the product is reduced from $3.76 per 100 pounds to $3.74, to equalize the Boston ceiling for raw cane sugar with that prevailing at the port of New York. The basic price of $5.60 per 100 pounds of refined sugar has been the same in New York and Boston and will remain the same.

A study was made of prices for a period of five years prior to price control of off-shore raw cane sugars delivered from the sugar-producing areas of the Caribbean to Boston. This study discloses that in spite of the ordinary differentials in the freight, the refiners in Boston generally obtained their raw cane sugars at prices approximately the same as those paid by refiners in New York city.

Under present war conditions the Commodity Credit Corporation is the sole importer of raw cane sugars. It makes sales direct to refiners both at Boston and New York, and it has indicated its willingness to maintain the traditional equality of prices for deliveries at these two ports.

The reduction takes effect January 1, 1944. At that time a new contract between the Commodity Credit Corporation and sugar refiners goes into effect.

(Revised Price Schedule 16, Amendment 4—Raw Cane Sugars—effective January 1, 1944.)

Sugarcane Diseases

Dept. of Plant Pathology, L. S. U.

There are four important diseases of sugarcane, mosaic, red rot, root rot, and chlorotic streak.

Red Rot and Root Rot. Losses from these diseases can be reduced by planting the varieties that show some resistance. Varieties which are susceptible like C.P. 33-243 should only be planted under conditions recommended by the Experiment Station. Losses can also be decreased by improving the drainage of the fields.

Mosaic. Two of the commercial varieties of sugarcane, Co. 281 and Co. 290, are highly susceptible to mosaic. Since no satisfactory substitutes have been produced to replace these varieties in certain areas of the State, it is necessary to control mosaic if satisfactory crops are to be grown. Roguing of seed plots is generally practiced in the principal Co. 290 areas of the sugarcane belt and consequently mosaic has been practically cleaned up in these areas. As a result, crop production has been increased in the neighborhood of 20 per cent. However, there are still many areas where little attention has been paid to the mosaic problem in Co. 290. If this problem is given serious consideration by County Agents, the disease should be brought under control. The control of mosaic in Co. 281, while more difficult, can be accomplished if seed plots, planted with relatively mosaic-free seed are rogued systematically, are used. The all important things in the control of mosaic by roguing in these two susceptible varieties are: (1) Begin with seed cane that has less than 5% of the stalks mosaic diseased. (2) Systematic roguing, beginning in May, or as soon as the mosaic can be definitely detected in the young plants, and continuing regularly throughout the summer months at about ten-day intervals. The seed pieces from which mosaic plants have developed should be dug out. Of course, seed plots should be well isolated, one-half mile if possible, from mosaic-diseased cane of any variety.

Chlorotic Streak. There are two methods of controlling this disease in seed plots: (1) Using hot water-treated seed stock, and (2) using rogued seed.

The hot water treatment (50° C. for 20 minutes) eliminates the disease from cane stalks and it is the recommendation of the Experiment Station that this method be used in establishing seed plots of susceptible varieties like C.P. 29-320 and others in which the disease is present. Where facilities are not available for "dipping" the seed cane, chlorotic-streak free cane should be selected for planting seed plots. Chlorotic-streak has been controlled in seed plots by roguing on several properties. Knowing the potential damage that chlorotic streak can do in susceptible varieties, every effort should be made to secure only disease-free seed cane for planting purposes.

The following information on the control of mosaic and chlorotic streak has been taken from published articles by the pathologists of the U. S. Department of Agriculture.

*One of the most important points and, incidentally, one of the hardest to impress upon sugarcane

farmers is the value of planting mosaic-free seed regardless of the secondary spread into the planted cane. Most growers feel that if mosaic spreads into their fields they have lost all the effort expended in securing healthy seed. Such is not true, however, because, from the standpoint of sugar produced, the important thing is to start with healthy seed. The advantages of better stands and increased vigor secured from planting mosaic-free seed carry over into 1st and 2nd stubble crops even though secondary spread may bring the percentage of mosaic up to 50 or 75 in the plant cane crop. It is important, therefore, if either of these varieties, Co. 281 or Co. 290, is to be planted, to expend every effort to secure mosaic-free planting material.

A second point that should be emphasized is the necessity for starting to rogue as early as possible in the spring. The best success will be secured if plant cane is used.

Heavy fertilization of seed plots is a desirable practice.

**Chlorotic streak can be more easily controlled by roguing seed plots of the present commercial varieties than can mosaic. It is important that fields with not more than 5 per cent infection be selected for roguing, and that the first roguing be made not later than May. At least one more, and preferably two more roguings should be made in June. Roguing during the summer when the cane is tall is more difficult and expensive, and if a good job has been done in May and June, probably should not be necessary. A final survey of the rogued plots before planting time in the fall is desirable, at which time an additional roguing may be made if diseased plants are found.

C.P. 28-19, 29-103, 29-120, 29-320, and 34-120 are susceptible to chlorotic streak, and inspection of fields of these varieties to be used for seed is recommended in areas where chlorotic streak is known to occur, in order to determine whether roguing is desirable.

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*Summers, Eaton M.
A warning about mosaic in Co. 281.
Sugar Bulletin, Vol. 11, No. 23, Sept. 1, 1933, pp. 8-9.

*Summers, Eaton M. and Rands, R. D.
Losses due to planting of mosaic seed cane.
Sugar Bulletin 13, No. 15, May 1, 1935, pp. 2-6.

**Abbott, Dr. E. V., Sugar Bulletin 18 (14): 60-61, 1941; Sugar Bulletin 18 (19): 3-6, 1940; Sugar Bulletin 20 (18): 161-165, 1942.

Recommendations for a Sugarcane Borer Control Program in Louisiana

By A. L. Dugas

A number of very definite recommendations for the control of the sugarcane borer have resulted from many years of extensive observations and experimental research. All of these recommendations fit into a borer control program, which appears essential for the successful control of the borer.

The following recommendations are considered in the order in which they should be applied during the year and are grouped according to the purpose which they accomplish:

Recommendations

To Destroy Overwintering Borers

1—Burn trash, cane pieces, tops, grasses, etc., thoroughly.

Cane trash left in the fields during harvest is by far the most important source of borer infestation the following spring. A special effort should be made to burn all trash and clean up the fields as thoroughly as possible.

2—Shave summer planted cane and burn shaved-off plants.

After the plants have been killed-down by cold, they should be shaved-off, preferably in late February, and the shaved-off plants burned.

To Control First Generation Borers

3—Dust cane with cryolite.

First generation dusting is recommended for treatment of an entire plantation; for heavily infested areas from which there may be a substantial spread of borers into adjoining areas; and for smaller areas with a localized infestation.

Dust four times at weekly intervals, beginning with the first emergence of young borers. Apply dust at rate of about 8 pounds per acre per application with a power machine, and 10 pounds with a hand gun, while the air is quiet and dew is on the plants which is usually between 6 p. m. and 9 a. m.

4—Cut out or rogue dead hearts.

The roguing of dead hearts is recommended for areas with a light infestation, and as a follow-up of dusting to destroy any borer which may have survived the dusting treatment.

5—Cut out and destroy heavily infested early corn.

Heavily infested early corn should be cut and fed to livestock or otherwise destroyed before there is a movement of moths into adjoining cane.

To Control Second Generation Borers

6—Release Trichogramma.

Releases should not be made with the idea of replacing dusting, but to maintain the parasite population at the highest possible population and thereby increase its usefulness in supporting all other control practices.

7—Dust cane with cryolite.

Dusting for second generation control is recommended for smaller areas, such as seed plots or only a part or parts of infested areas, where there is danger of reinfestation from adjacent untreated cane.

Four applications at weekly intervals, beginning with the first emergence of borers, are necessary. Apply cryolite at the rate of about 10 pounds per acre per application.

To Insure Good Stands and Healthy Plant Cane

8—Plant borer-free cane.

Select seed cane as lightly infested as possible, and protect seed plots from borer injury.

To Decrease Number of Borers Entering Hibernation

9—Cut cane at ground level.

In harvesting, cane should be cut at ground level or just below the ground level to reduce the number of borers overwintering in cane stubble. This also serves to increase sugar production.

10—Make thorough clean-up during harvest.

It is far better to harvest clean than to rely upon burning after harvest to destroy material in which borers may be overwintering.

A man and a cart following the cane loader may pick up enough millable cane and pieces to more than pay for the operation, in addition to decreasing the number of borers entering hibernation.

War Prisoners

(Official Release by War Manpower Commission)

Increases in the prices paid the Government by private employers for the labor of prisoners of war since the War Manpower Commission undertook to certify going wage rates were revealed recently in a statement by Chairman Paul V. McNutt.

An agreement between the War Manpower Commission and the War Department under which the former certified the need for prisoner-of-war labor in any given case, and the wage rates to be used in determining the contract price for the work performed, became operative September 17 last.

Up to September 4, only 32 per cent of all contracts in agriculture called for wage rates of 30 cents an hour or over. Between September 17 and November 15 this increased to 70 per cent.

Non-agricultural wage rates for such labor similarly increased. Between September 17 and November 15, one-half of the contracts called for wages of 40 cents an hour or over, while only 35 per cent of the contracts before September 4 specified such wage rates. Non-agricultural occupations include food processing, pulpwood cutting, and road work.

Mr. McNutt said that the upswing in wage rates was due to WMC policy that the cost to the employer of war prisoner labor must not be less than that which would be incurred with the use of civilian workers. The Commission also requires that working conditions be equivalent to those prevailing in the locality for civilian workers performing similar jobs.

"Prisoners of war now in this country," said Mr. McNutt, "constitute a very important reserve source of manpower. This despite the fact that many circumstances militate against their utilization. In the first place, the War Manpower Commission itself requires that before need for such labor is certified, all supplies of free labor, including secondary sources, within the area from which workers normally come to perform work of this type, must be exhausted. If there still is labor to be obtained by study of local employment office registration or Selective Service questionnaires; by recruitment of workers by personal canvass, advertising, or through cooperation with labor organizations and other community groups, or in any other way, then it cannot be said that an area's supply is 'exhausted'.

"In the second place, when a need is established, beyond question, there are certain conditions that must be met. These include limitations imposed by the Geneva Convention as to type of labor, etc., shortage of guards, transportation difficulties, the fact that detention camps are concentrated in areas where few work opportunities exist, and the unwillingness of the War Department to bring prisoners of war into congested areas.

"In any event, the War Manpower Commission will continue to operate, with respect to the employment of prisoners of war, in conformity with this fundamental policy:

" 'Prisoners of war shall not be used in any way which will impair the wages, working conditions and employment opportunities of resident labor, or displace employed workers.' "

Official Release

(Entries of Sugar from Offshore Areas Through November 30, 1943)

As Announced by Sugar Branch W. F. A.

The quantity of sugar entered for consumption from all offshore areas during January-November amounted to 4,560,997 short tons, raw value. For the corresponding period last year the quantity entered totaled 3,319,595 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 229,587 short tons, of sugar, raw value, was marketed by the mainland cane area and 1,346,080 tons by the continental beet area during January-October, 1943, as compared with 191,979 tons and 1,477,811 tons, respectively, during the same period of 1942.

Area	Quantity entered through November 30 (short tons 96° equivalent)
Cuba	3,042,461
Puerto Rico	589,480
Hawaii	829,431
Virgin Islands	3,004
Foreign countries other than Cuba	96,621
Total	4,560,997

DIRECT-CONSUMPTION SUGAR

Direct-consumption sugar is included in the foregoing quantities shown as entered through November 30.

Area	Quantity entered through November 30 Sugar Polarizing 99.8° and above (short tons, 96° equivalent)	Sugar Polarizing less than 99.8° (short tons, 96° equivalent)	Total (short tons, 96° equivalent)
Cuba	343,413	25,973	369,386
Puerto Rico	94,785	7,080	101,865
Hawaii	0	1,324	1,324
Total	438,198	34,377	472,575

ENTRIES FROM FULL-DUTY COUNTRIES

Area	Quantity entered Through November 30* (pounds)
Australia	34,551,348
British West Indies	9,331,166
Dutch East Indies	6,490,243
Fiji Islands	56,031,792
Martinique	40,467,223
Mexico	42,162,115
New Zealand	165,303
Peru	4,042,680
Total	193,241,870
Tons	96,621

*Excluding the first 20,000 pounds entered from each area. Under the quota provisions of the Sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, these deductions continue to be made in order to keep entry figures on a basis comparable with those of previous years.

Official Release

(Sugar Ration Remains Unchanged)

Sugar rations for home use will remain the same for another two and a half months, the Office of Price Administration recently announced.

Sugar stamp Number 30 in War Ration Book Four becomes valid on January 16, 1944, and will be good for five pounds of sugar through the end of March. Sugar stamp 29, now in use, expires on January 15.

The announcement that the consumer sugar ration will be maintained at present levels for another ration period closely follows the recent statement by OPA that rations for institutions such as hotels and restaurants will also remain the same for the time being, and that industrial users will return to their former allowance of 80 per cent of their 1941 base when the present "bonus" period ends on December 31.

This general stability in sugar rations, for home use as well as for the trade, is based on the estimated civilian allocation for the first quarter of 1944, OPA explained. This allocation has tentatively been set by the War Food Administration at 1,044,000 tons, or about 100,000 tons more than the amount of sugar that was actually distributed for civilian use during the comparable quarter of 1943.

However, OPA points out that this difference in 1944 allocations as compared with 1943 use will be taken up in a number of different ways, most important of which are as follows:

1. In the first quarter of 1943 industrial users were receiving 70 per cent of the amount of sugar they used in the base period in 1941; in 1944, they will be using 80 per cent of the amount used in the base period.

2. In the first quarter of 1943, manufacturers of jams, jellies, marmalades and other fruit spreads were receiving 70 per cent of their 1941 use, just like most other industrial users. In 1944, in order to increase the output of these foods, they will be allowed as much sugar as they need to utilize all the fruit and production facilities at their disposal.

3. A number of sugar-containing products such as frozen apple sauce, frozen grapefruit sections, and baked beans which were either not being made commercially at all in 1943 or only in limited amounts, are now requiring more sugar.

4. Supplementary allotments of sugar have been allowed for the manufacture of drugs and pharmaceuticals.

(Amendment 109 to Ration Order 3 Sugar—to be issued January 3, 1944, effective January 7, 1944.)

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Vol. 22 NEW ORLEANS, LA., FEBRUARY 1, 1944 No. 9

Offer to Processors of 1943 Crop Salvaged Louisiana Sugarcane

CCC Letter No. 4 to Processors of Louisiana Sugarcane Dated January 12, 1944

Commodity Credit Corporation, a corporate agency of the United States (hereinafter called "Commodity"), having embodied in a circular letter, designated CCC LETTER NO. 2 TO PROCESSORS OF LOUISIANA SUGARCANE, an offer to make certain pay ments to Processors for the benefit of producers on the basis of standard sugarcane delivered, and having made no provision in said offer for the contingency of a widespread freeze which has since occurred, now, in order to salvage as large a tonnage as practicable of sugarcane which has been damaged by a freeze and in order to assist in clearing the fields and increasing the supply of sugar and molasses, hereby offers, subject to the terms and conditions specified below, to make payments to Processors of 1943-crop salvage sugarcane.

1. For the purposes of this offer, "salvage sugarcane" shall be sugarcane of the 1943 Louisiana crop which was damaged by freeze and cannot qualify as standard cane and which was
   (a) harvested by producers after January 8, 1944, and accepted by the Processor for the extraction of sugar or molasses, or
   (b) harvested by the Processor after January 8, 1944, from his own production for the extraction of sugar or molasses.
2. (a) Processor shall be obligated to pay to producers the sum of 33 cents with respect to each ton of salvage sugarcane, in addition to the price otherwise payable by Processor for such salvage sugarcane.
   (b) Said 33 cents shall be paid to the producer by the Processor as follows:
   25 cents on delivery of such salvage sugarcane, which amount may be paid by the Processor from funds received from Commodity under Section 2(a) of CCC LETNO. 2 TO PROCESSORS OF LOUISIANA SUGARCANE, and 8 cents as soon as practicable after March 31, 1944.
   (c) As soon as practicable after March 31, 1944, Processor shall submit to Commodity a statement in such form as Commodity may prescribe showing the total quantity of salvage cane, the total amount paid hereunder with respect to salvage sugarcane to producers by Processor, and the total amount owing to producers by Processor with respect to such sugarcane.
   (d) As soon as practicable after March 31, 1944, Commodity shall, on application of the Processor approved by Commodity, pay to the Processor any amount by which (i) the product of the number of tons of salvage sugarcane multiplied by 33 cents per ton of such sugarcane exceeds (ii) the amount owed by by the Processor to Commodity pursuant to CCC LETTER NO. 2 TO PROCESSORS OF LOUISIANA SUGARCANE.
   (e) In making settlement under CCC LETTER NO. 2 TO PROCESSORS OF LOUISIANA SUGARCANE, appropriate credit shall be given for the total number of tons of salvage sugarcane with respect to which payments are made under (b) hereof from funds received from Commodity under Section 2(a) of CCC LETTER NO. 2 TO PROCESSORS OF LOUISIANA SUGARCANE.

THE
SUGAR BULLETIN
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Marcel J. Voorhies, Editor
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In which are consolidated
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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
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3. No Member of or Delegate to the Congress of the United States shall be admitted to any share or part of this offer or to any benefit arising therefrom, but this provision shall not be construed to extend to benefits arising from this offer if accruing to a corporation.
4. Any Processor desiring to accept this offer shall return a copy hereof to Commodity with his acceptance endorsed thereon.

COMMODITY CREDIT CORPORATION,
By J. B. Hutson,
President.

(1943 Sugar Mill Letter No. 5)

January 12, 1944

To: Louisiana Sugar Mills and Parish Administrative Officers in Sugar Parishes

Subject: Incentive Payments on Salvage Cane

We have been advised by the Sugar Branch, Food Distribution Administration, that the Commodity Credit Corporation has revised its letter of October 22, 1943, by offering to make incentive payments of 33 cents per ton on actual weight of "Java Formula" sugarcane delivered to mills for processing into sugar after January 8, 1944. No incentive payment will be made on sugarcane left in the field.

This means that a full 33 cents per ton payment will be made on all sugarcane, the normal juice of which polarizes 9.4% sucrose or below on all cane processed for sugar. On all cane, the normal juice which polarizes 9.5% or more, payments will be made on standard tons as was the case before freeze damage became apparent.

This payment will be made for the purpose of assisting producers to complete their harvesting operations and clear their fields for the 1944 crop, also to increase as much as possible the production of sugar and blackstrap molasses from the 1943 crop.

Please notify all of your growers.

A. C. Smith,
Administrative Officer in Charge.

1944 Sugar Program

By C. J. Bourg

War Food Administrator Marvin Jones announced on January 26, 1944, proposals for support prices on certain farm products, declaring:

> "It must be clearly understood that this proposal is subject to action by the Congress making provision for carrying out the support price program, and will not be effective unless such provision is made."

The War Food Administrator stated that the levels of price support represent the best judgment of the WFA on the floor prices needed to implement the 1944 production program.

Among the farm products covered in the announcement is the following:

Louisiana Sugarcane

"The price support program for the 1944 crop of Louisiana sugarcane was announced on August 28, 1943. Under this program the War Food Administration will enter into agreements with sugarcane processors under which support payments of about 85 cents per ton of sugarcane will be made to producers through the processors. It is estimated that total returns to growers for 1944 crop sugarcane of average quality will average about $6.45 per ton in the case of small growers and about $6.25 per ton for all Louisiana growers."

* * * * *

The Senate Banking and Currency Committee has reported favorably on the so-called "Subsidy Bill" which passed the House of Representatives before Christmas. The Senate will consider the Bill within the next few days. As the present term of the Commodity Credit Corporation will expire February 17th, Congressional action is expected before that date. Commodity will not make a formal written offer until Congress shall have acted finally on the subsidy issue. Discussions between representatives of the CCC and the Louisiana Sugar Industry must therefore be postponed. When Congress acts, a formal written offer on the 1944 crop is expected to be made by CCC to processors, through whom support payments of 85 cents per ton of sugarcane will be paid to producers.

When Is Parity?

"Agriculture Prices" is a publication of the Bureau of Agriculture Economics, U.S.D.A., issued monthly. The December issue contains some interesting information on "Parity". It is particularly interesting to domestic sugar producers because it contains an announcement of official parity computations on

sugarcane and sugar beets. All other crops are reported on monthly, but as shown by foot note [9] below, the parity price for the 1943 sugarcane or sugar beet crop is the average of monthly parities for the calendar year 1943. As a consequence, the parity index for other farm products in December is 168 (the latest monthly index), while the parity index on sugarcane or sugar beets is only 163 (the average of 1943 monthly parities). Apparently, the result is the important thing, not the parity formula.

Parity Index Up One

The index of prices paid, interest, and taxes advanced from *167* per cent of the 1910-14 level in November to *168 per cent in December* and with the prices received index sharply higher, farm product prices averages 117 per cent of parity in mid-December. This ratio, which is a fairly satisfactory indication of farmers' purchasing power, was 115 last month and 114 December a year ago. * * *

1943 Prices Up Sharply: Farm product prices for the entire year 1943 averaged 188 per cent of the 1909-14 base period, 31 points higher than in 1942 and the highest level since 1920. Prices paid by farmers for commodities, interest, and taxes (parity index) averaged *163* per cent of the 1910-14 level during 1943 and 12 points above 1942. The ratio of prices received to prices paid, interest and taxes at 115 percent for the year was 11 points above 1942 and was higher than in any year since 1918. * * *

Farm Crops

Farm crops: United States Average prices for the crop marketing seasons, 1941-43, and parity prices, December 15, 1943

		Season average prices[1]			Parity bases and price data	
Commodity and Unit		1941	1942	1943[2]	Base period[3]	Parity price Dec. 15, 1943
Sugarcane sirup, per gal.[7]	ct.	60.7	74.0	101.3	1909-13	77.3
Sugarcane for sugar, per ton[8]	dol.	4.00	4.40	4.41	1909-13	[9]6.27
Sugar beets, per ton[8]	dol.	6.47	6.83	7.19	1909-13	[9]9.24

[1] State average weighted by production to obtain U. S. averages unless otherwise specified.
[2] Preliminary.
[3] Base period designated begins with August in the earleir years and ends with July in the final year, i.e. August 1909–July 1914; August 1919–July 1929 etc.
[7] December 1 prices for all States exeept Louisiana which is season average.
[8] Excluding Government payments.
[9] Parity prices for the 1943 erop which is the average of monthly parities for the calender year 1943.

James B. Larrowe

The recent passing of Mr. James B. Larrowe, president of the Farmers' and Manufacturers' Beet Sugar Association, marked the end of a typical American career.

For decades, Mr. Larrowe was the principal dealer in beet pulp. Even before he came actively into the domestic sugar industry as president of the Great Lakes Sugar Company and the Lake Shore Sugar Company, he supervised installations in beet sugar factories, particularly beet pulp driers which, under his leadership and supervision, became an integral part of industrial operations. Mr. Larrowe once told the writer that he had failed three times, when as a matter of fact a more accurate and less humble statement would have been that he succeeded four times. This statement was typical of this remarkable gentleman, who personified American energy, pioneering and progress. Depressions and business losses were only stimulants that challenged his energies and imagination, driving him to each of his successes.

Personally, Mr. Larrowe was one of the most charming gentleman among gentlemen it has been our privilege to know. His frank expressions and his natural wit were a delight to all who were fortunate enough to be associated with him. His leadership in the domestic sugar industry was uncompromising and always forward-looking. He will have his successors, but none will fully take his place.

C. J. Bourg.

Fertilizer Outlook Good - Early Buying Urged

From The National Fertilizer Association

Washington. D. C.—The present prospect is that during the year ending June 30, 1944, more fertilizer will be produced, distributed, and used on American farms than in any previous year. Figures published by The National Fertilizer Association indicate a total consumption of all kinds of fertilizer in excess of 11,000,000 tons. Last year's consumption was about 10,500,000 tons; in 1940 it was less than 8,000,000 tons. The Association represents nearly 400 active member companies, operating more than 500 of the country's 900 fertilizer mixing plants.

However, in view of labor shortages in fertilizer plants and transportation difficulties, it is wise for every farmer who has a dry place in which fertilizer can be stored to order it now and have it delivered as early as possible. It is necessary to keep fertilizer moving if the heaviest demand in all our history is to be met.

Agriculture is now the Nation's No. 1 consumer of chemical nitrogen—war is No. 2 and industry No. 3. This has been made possible by a very large expansion of our air-nitrogen industry both by the Government and by private industry, and by continued importations from Chile and from Canada.

Last year 460,000 tons of actual nitrogen were used as fertilizer, 204,000 tons as side and top dressings, and 256,000 tons in mixed fertilizers. Government agencies now give assurance that 625,000 tons of actual nitrogen will be available for fertilizer use this year—35 percent more than last year. Of this total, 271,000 tons will be available for side and top dressing, 354,000 tons for use in mixed fertilizer.

There will be about as much nitrate of soda for direct use as last season. Ammonium sulphate will be used entirely in mixed fertilizers except in the West, where it will be available for direct use or for mixing, but there will be larger supplies of cyanamid, uramon, and ammonium phosphate than in either of the past two years. There will also be cal-nitro, formerly imported from Norway and Germany and now produced in this country.

Ammonium nitrate containing 32.5 per cent of nitrogen is now being produced in quantity in a number of Government plants in this country and Canada and by one private plant in California. About 230,000 tons have been allocated for direct use, and will be available to farmers in all parts of the country.

Production of superphosphate has been increasing steadily month by month in existing plants, some stand-by plants have been reopened, and construction of some new plants has been authorized. Production of normal superphosphate in 1942 was 5,144,484 tons basis 18 percent. The present rate of production indicates a total output of over 6,500,000 tons for the 1943-1944 fertilizer year. It is estimated that about

6,000,000 tons of this will be distributed by the fertilizer industry in mixed fertilizer and as superphosphate, and the rest by AAA in its grant-of-aid program. About 300,000 tons of concentrated superphosphate will be produced, something more than a third of which will probably be exported under Lend-Lease.

Domestic potash plants are producing about 700,000 tons of actual potash this year as compared with about 380,000 tons produced in 1940, but even so there will not be enough to supply the fertilizer demand. The average potash content of all mixed fertilizers sold last year was just over 7 percent as compared to 6 per cent in 1939 and 1940. With an increased tonnage of mixed fertilizer to be manufactured this year, it is expected that the potash content will average about 5.5 percent—about the same as 1936. The nitrogen content of mixed fertilizers will be increased substantially, and phosphoric content will remain about the same.

The Office of Price Administration has issued the Second Revision of MPR 135 which sets dollars-and-cents prices for each permitted grade in each State substantially at present levels.

OFFICIAL FERTILIZER PRICES ISSUED
By The
OFFICE OF PRICE ADMINISTRATION

SCHEDULE J AND K—MISSISSIPPI AND LOUISIANA

(a) *Maximum consumer's delivered-to-railhead or dealer's warehouse cash prices for goods in 100-pound textile bags.*

Grade:	East of Mississippi River Price per ton	West of Mississippi River Price per ton
12-8-0	$ 44.30	$ 45.20
10-0-10	39.70	42.60
6-8-4	35.10	36.20
5-10-5	35.20	36.40
4-16-0	34.90	35.20
4-12-6	35.30	36.60
4-12-4	33.90	35.20
4-8-8	32.90	35.20
3-12-12	37.00	39.20
0-14-7	28.50	31.00
0-12-12	30.10	33.20
0-20-0	24.00	27.20
0-19-0	23.25	27.60
0-18-0	22.50	26.60
0-0-60 Muriate of Potash	51.80	53.00
0-0-50 Muriate	46.45	47.60
0-0-25 Manure Salts	32.60	32.60
0-0-48 Sulphate of Potash	56.45	------
0-0-21.5 Sulphate of Potash Magnesia	46.45	47.60

Official Release

(Mainland Normal Yield Per Acre)

Determination of (1) normal yield of commercially and recoverable sugar per acre and (2) eligibility for payment with respect to abandonment and crop deficiency for farms in the mainland cane sugar area (revised)

Pursuant to the provisions of section 303 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Normal yield of commercially recoverable sugar per acre and eligibility for payment with respect to abandonment and crop deficiency for farms in the mainland cane sugar area—(a) *Normal yield calculation.* The normal yield of commercially recoverable sugar per acre for any farm in the mainland cane sugar area in which sugarcane is grown and marketed (or processed by the producer) for the extraction of sugar shall be:

(1) The average number of hundredweights of commercially recoverable sugar per acre of sugarcane harvested on the farm and marketed (or processed by the producer) for the extraction of sugar during the crop years 1937-38, 1938-39 and 1939-40 (as shown on applications for payment under the mainland sugarcane programs) if sugarcane for sugar was harvested on the farm in all of such crop years, or

(2) The average number of hundredweights of commercially recoverable sugar per acre of sugarcane harvested on farms in the community in which the farm is located and marketed (or processed) for the extraction of sugar during the crop years 1937-38, 1938-39 and 1939-40, if sugarcane for sugar was not harvested on the farm in all of such crop years.

(b) *Eligibility for abandonment and deficiency payments.* Any farm located in a parish, county, or local producing area, as defined herein, in which actual yields of commercially recoverable sugar from the sugarcane for farms comprising 10 per cent or more of the sugarcane acreage of all farms in such parish, county, or local producing area, were 80 per cent or less of the normal yields therefor, because of drought, flood, storm, freeze, disease or insects, shall be eligible for abandonment and deficiency payments.

A "local producing area" shall be all contiguous farms which are found by the Parish or County Agricultural Conservation Committee of the Agricultural Adjustment Agency in which the farm is located to be similar with respect to types of soil or with respect to topography: *Provided, however,* That farms separated from other farms by any natural barrier such as mountains or large areas of land shall not be included within the same local producing area.

This determination supersedes the "Determination of (1) Normal Yield of Commercially Recoverable Sugar per Acre and (2) Eligibility for Payment with Respect to Abandonment and Crop Deficiency for Farms in the Mainland Cane Sugar Area, Pursuant to Section 303 of the Sugar Act of 1937, as Amended," issued October 22, 1940.

Done at Washington, D. C., this 7th day of December, 1943.

ASHLEY SELLERS,
Assistant War Food Administrator.

Official Release

(Proportionate Shares for Sugarcane Farms in Mainland Area, 1944)

Pursuant to the provisions of section 302 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

802.26f *Proportionate shares for the mainland cane sugar area for the 1944 crop.* (a) *Farm proportionate share.* The proportionate share for the 1944 crop for each sugarcane farm in the mainland cane sugar area shall be the number of acres planted thereon for the production of sugarcane to be marketed (or processed by the producer) for the extraction of sugar or liquid sugar during the 1944 crop season.

(b) *Tenant and sharecropper protection.* Notwithstanding the establishment of a proportionate share for any farm under paragraph (a) above, eligibility for payment of any producer on the farm shall be subject to the following conditions:

(1) That such producer shall not have entered into any leasing or cropping agreement for the purpose of diverting to himself or other producers any payment to which tenants or sharecroppers would be entitled if their 1943 leasing or cropping agreements were in effect.

(2) That such producer shall not have interfered with any contracts entered into by tenants or sharecroppers for the sale of their sugarcane or their share of the sugarcane produced on the farm.

Issued at Washington, D. C., this 22nd day of January, 1944.

ASHLEY SELLERS,
Assistant War Food Administrator.

Official Release

(Maximum Prices For Cane Syrup)

The ability of syrup producing mills to manufacture sugar will be the yardstick to be used in the application of established maximum prices for cane syrup, the Office of Price Administration announced on January 21st.

Those small mills in which farmer-growers process syrup exclusively from sugarcane are the only ones that are entitled to use the schedule of ceiling prices contained in the syrups and molasses regulations for "country cane syrup." Commercial factories producing both sugar and syrup must use the lower range of ceiling prices provided for "commercial cane syrup." No change in the two established sets of maximum prices of cane syrup is involved in the clarifying action, which is effective January 26.

The regulation previously had drawn a distinction between country cane syrup and commercial cane syrup on the basis of whether or not the mill during a stated period was comprised for six or more rollers with a 24-hour grinding capacity of 250 tons or more of sugarcane. The line of distinction is now more sharply drawn.

Country cane syrup is defined in the revision as a product produced in a mill that at this time is equipped for the production of cane syrup only and it is not now and was not equipped with machinery to manufacture sugar during the 1941 cane grinding season. Commercial cane syrup is defined as cane syrup produced in a mill that at this time is equipped or during the cane grinding season of 1941 was equipped with machinery to manufacture sugar.

OPA also consolidated sections of the regulation with discounts and class differentials.

(Amendment No. 1 to Revised Maximum Price Regulation 291—Certain Syrups and Molasses—effective January 26, 1944.)

Official Release

(Fair and Reasonable Prices for 1944 Hawaiian Sugarcane)

Pursuant to the provisions of subsection (d) of section 301 of the Sugar Act of 1937, as amended, and Executive Order 9322, issued March 26, 1943, as amended by Executive Order 9334, issued April 19, 1943, the following determination is hereby issued:

Fair and reasonable prices for the 1944 crop of Hawaiian sugarcane. Fair and reasonable prices for the 1944 crop of Hawaiian sugarcane shall be not less than those provided for in the agreements, verbal or written, pursuant to which the 1943 crop was purchased. *Provided, however,* That the processor shall not be deemed to have met the requirements of this determination if, through any subterfuge or device whatsoever, the returns from the 1944 crop of Hawaiian sugarcane to the producer are reduced below those determined above.

Issued at Washington, D. C., this 18th day of December 1943.

ASHLEY SELLERS,
Assistant War Food Administrator.

Salary Adjustments for Agricultural Labor

(By Paul G. Borron, Jr.)

Under a recent amendment to the regulations of the Economic Stabilization Director, and under regulations issued by the War Food Administrator on January 17, 1944, all applications for approval of adjustments in the wage or salary payments of agricultural labor which are $2,400.00 per annum or more, or which will raise such salary or wage payments to more than $2,400.00 per annum, are subject to the jurisdiction of and must be approved by the War Food Administrator. Prior to this amendment, such adjustments were subject to the jurisdiction of the War Labor Board or Salary Stabilization Unit of the Bureau of Internal Revenue.

Under the regulations of the War Food Administrator, "The term 'agricultural labor' means persons who are employed in farming in any of its branches, including among other things the cultivation and tillage of the soil, dairying, the production and cultivation and harvesting of agricultural or horticultural commodities, and the raising of livestock, bees, or poultry; Provided, however: That the term 'agricultural labor, shall not include any person whose salary payments exclusive of bonuses and additional compensation, and without regard to the contemplated adjustment, are at a rate computed on an annual basis which exceeds $5,000.00 per annum."

Further, under the regulations, "the phrase $2,400.00 per annum' shall mean $200.00 a month or the equivalent weekly, hourly, piece work rate or comparable basis, except that in individual cases salary or wage payments may be more than $200.00 a month or the equivalent rate for not exceeding sixty days in any one year, if the aggregate wage or salary payments to the laborer from all sources of employment as an agricultural laborer are not more than $2,400.00 for that year".

At this time no approval is required for wage or salary increases up to $2,400.00 per annum for agricultural labor employed in this area in sugarcane production. However, the Administrator has authority to determine that, with respect to areas, crops, classes of employers, or otherwise, such increases may no longer be made without the approval of the Administrator.

It should be particularly noted that employers of agricultural labor are subject to the provisions of these regulations, irrespective of the number of employees which they employ. Employers, other than those engaged in agriculture, who do not employ more than eight persons, are not subject to the Wage and Salary Stabilization program.

Increases in the wages and salaries of agricultural workers will not be approved, except in the following cases:

"(a) Such adjustments as may be deemed proper by the Administrator and have not heretofore been made to compensate in accordance with the 'Little Steel' formula as heretofore defined by the National War Labor Board, for the rise in the cost of living between January 1, 1941, and May 1, 1942.

"(b) Salary and wage adjustment clearly necessary to adjust salaries or wages up to the minimum of the tested and going rates paid for the same work in the same or most nearly comparable areas in the same labor market, except in rare and unusual cases in which the critical needs of the agricultural war production require the setting of a salary or wage at some point above the minimum of the going salary or wage bracket.

"(c) Reasonable adjustments may be made with the approval of the Administrator in case of promotions, reclassifications, merit increases, and incentive payments: Provided, That such adjustments do not increase the level of production costs appreciably or furnish a basis either to increase prices or to resist otherwise justifiable reductions in prices."

An application for approval of such adjustments should be filed with the Director, Office of Labor, War Food Administration, Washington D. C. No adjustment should be made unless approval is obtained.

This amendment does not change the procedure to be followed in obtaining approval of adjustments in sugar cane processing factories, or in other types of employment.

The regulations of the War Food Administrator appear in full in the Federal Register of January 18, 1944, beginning at page 655. If any sugarcane grower desires additional information, he may communicate with the office of the American Sugar Cane League, 414 Whitney Building, New Orleans 12, Louisiana.

The Red Rot and Borer Problem in Co. 290

By I. L. Forbes, Plant Pathalogist, and A. L. Dugas, Associate Entomologist, Louisiana Agricultural Experiment Station.

In 1910-11 Edgerton called attention to the close relationship existing between the sugarcane borer and the red rot disease in varieties being grown in Louisiana at that time. Doubtless the association of these two biological factors played a major role in the "running out" or failure of the old Noble canes. Since the establishment of the Canal Point Sugarcane Breeding Station and the development of new varieties, intensive disease investigations by both the Louisiana Agricultural Experiment Station and the U. S. D. A. Station at Houma have resulted in the release of varieties resistant, with some exceptions, to such diseases as red rot. The Co. 290 is a variety from the Coambitore Station in India, released to the Louisiana industry in 1933. Unfortunately it is susceptible to the red rot disease. As reported by the senior author in the March 1, 1942 and again in the Sept. 1, 1943 issues of the Sugar Bulletin, red rot often accounts for stand failures in Co. 290. As stated above, the C. P. seedlings released for commercial planting are ones that have been proven to be "commercially" resistant to red rot. However, red rot often accounts for gappy stands in some of these.

A rather extensive examination of dusted and non-dusted fields of standing Co. 290 cane revealed the presence of a substantial infection of red rot disease in the borer infested cane of the non-dusted areas, as compared to the almost complete absence of red rot in the healthy cane protected from borer injury by dusting with cryolite. In view of this finding, the authors thought it very important to bring to the attention of growers the great danger from the presence of red rot in growing or mill cane of Co. 290 and to emphasize the fact that this condition can be prevented by controlling the sugarcane borer. It is true that Co. 290 is very susceptible to borer injury, which alone would result in material reduction in yield, but since borers are followed by red rot there is no practical method of determining damage done by borers alone to a red rot susceptible variety like Co. 290. The fact that borer punctures are avenues of entrance for the red rot fungus and the equally important fact that the borer damage to growing cane predisposes the stalks to severe damage by the red rot constitute argument enough for controlling the sugarcane borer.

Results obtained by the junior author on small plot tests in 1942 and on plantation scale experiments in 1943 have proven conclusively that the borer can be controlled economically by dusting growing cane with cryolite. Experimental data showed gains up to $50.00 per acre from borer control under conditions of a heavy infestation by dusting with cryolite, and commercial dusting of sufficiently large acreages demonstrated the practicability of this method of combating the borer.

It has been found that the control of the borer by dusting with cryolite is applicable to either a large plantation or to a small farm. Dust may be applied with hand gun, power ground machine, or airplane, depending upon the acreage to be treated. Excellent control of either first generation or second generation borers may be attained, the choice of which should depend upon the extent and level of infestation. In any case, the benefits received from dusting are proportional to the level of borer infestation. The discovery of the fact that second generation borer control is possible by dusting with cryolite, even under the severest conditions for reinfestation by later generations, is of the greatest practical significance. By controlling the second generation of borers a grower may treat a small part of an infested area, or a small grower may dust his farm even though surrounded by infested cane of his neighbors without fear of losing a large part of the benefits from reinfestation by later generations of borers. However, it should be emphasized that in all cases the maximum benefits from borer control are obtained by treating the whole infested area.

The average cost of dusting for either first or second generation borers is about $6.00 per acre. We have been told that sufficient cryolite dust will be available in 1944 to take care of the anticipated needs of sugar planters in Louisiana for borer control by dusting. The fact that controlling borers also results in a control of the red rot disease in standing cane is additional argument for this practice. For complete information on borer control refer to Louisiana Bulletin 363, 1943, "Recommendations for a Sugarcane Borer Control Program in Louisiana."

Cuba Sells U. S. High-Test Molasses

As announced by the Department of State on December 22, a Cuban Commission was in Washington to discuss with the Foreign Economic Admnistration and other Government agencies the implementation of existing contracts on the 1944 Cuban sugar crop, and the acquisition by the United States of molasses and alcohol.

The representatives of the two Governments on January 7th announced that an agreement has been reached to produce, as part of the Cuban sugar crop of 1944, invert molasses equivalent to 800,000 short tons, raw sugar basis. This invert molasses is to be

purchased by the Defense Supplies Corporation, for the production of industrial alcohol at 2½ cents per pound total sugar content, FOB tank car at Cuban terminal or FOB coastal point of delivery.

As a result of the agreement, the Cuban sugar crop can now be fixed at a minimum of 4,827,240 short tons. Of this total 200,000 tons will be used for local consumption in Cuba, and 800,000 tons of sugar in the form of invert molasses will be used for production of alcohol for the war effort. The remainder of the 4,827,240 tons, or 3,827,240 tons, as well as any additional sugar that can be produced in Cuba by grinding all available cane, will be acquired by the Commodity Credit Corporation under the contract signed in September, 1943.

Other phases of the negotiations are progressing, and representative of the two Governments expect to reach in the not distant future satisfactory conclusions in the interests of both countries and their joint efforts in the prosecution of the war.

Official Release

(Louisianians to Serve on Blackstrap Molasses Committee)

Two industry advisory groups having to do with the production and distribution of blackstrap molasses have been formed by the Office of Price Administration.

A subcommittee of the Cane Sugar Refining Industry Advisory Committee is made up of cane blackstrap molasses producers. Thirty sugar refining companies producing cane blackstrap molasses will be represented by six members of this subcommittee who will consult with OPA on any pricing problems which demand a mutual solution.

Members of this subcommittee are:

Joseph F. Abbott, President, American Sugar Refining Cmpany, New York City; Thomas Oxnard, Vice-President, Savannah Sugar Refining Corp., Savannah, Ga.; Walter F. Woodul, Imperial Sugar Company, Sugar Land, Texas; *R. M. Murphy, Secretary, Milliken and Farwell, New Orleans;* L. Campiglia, President, California and Hawaiian Sugar Company, San Francisco, and Lawrence G. Washburn, President, Sucrest Corporation, New York City.

Another committee set up by OPA is composed of blackstrap molasses distributors. Its nine members will represent organizations engaged in the purchase and resale of blackstrap molasses in bulk and packaged form. There are fifteen such organizations in the Continental United States.

The members of this committee, who will advise and consult with OPA on maximum price regulations governing the industry are:

A. M. McNamara, President, Manard Molasses Company, New Orleans; Joseph H. Loeffler, Director of Purchases, Standard Brands, New York City; B. H. Ticknor, II, Sr. Partner, Industrial Sales Company, Leonia, N. J., M. A. Roseman, President, National Molasses Company, Philadelphia; A. I. Kaplan, President, Southwestern Sugar and Molasses Company, New York City; J. H. Leftwich, President, J. H. Leftwich and Company, Mobile, Ala.; Donald MacLean, President, The Pacific Molasses Company, San Francisco; *C. W. Peterman, Harry L. Laws and Company, New Orleans,* and Oscar A. Saar, Vice-President, American Molasses Company, New York City.

A Summary of Recommendations for Sugarcane Insect Control

The following recommendations have been made by the Houma Laboratory of the U. S. Bureau of Entomology and Plant Quarantine for sugarcane insect control in Louisiana:

At all times of the year there are measures which can be followed which are of material value in controlling the sugar cane borer. These are as follows:

Harvest Time

(1) Make a more thorough clean-up of pieces of millable cane during harvesting operations to eliminate the overwintering of borers in these large pieces.

(2) Cut lower when harvesting cane to decrease the number of borers ovrwintering in cane stubs and to increase sucrose production.

Winter

(1) After harvesting, thoroughly burn the trash as soon as it is dry, to destroy overwintering of borers.

(2) During the winter cut and burn all grasses in which borers might hibernate in and around fields.

Growing Season

(1) Rogue out dead hearts caused by first-generation borers where labor is available. To be effective roguing should be done three times at 8- to 10-day intervals.

(2) Dust with cryolite in accordance with recommendations drawn up jointly by the U. S. Bureau of Entomology and Plant Quarantine and the Louisiana Agricultural Experiment Station and published in the March 1, 1943 issue of the Sugar Bulletin.

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A Summary of Insecticide Tests on the Sugarcane Borer in 1941[1]

By A. L. Dugas, Louisiana Agricultural Experiment Station, and J. W. Ingram, U. S. Department of Agriculture, Agricultural Research Administration Bureau of Entomology and Plant Quarantine.

Since the fall of 1937 the Louisiana Agricultural Experiment Station and the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture have cooperated in investigations on the use of various insecticides for the control of the sugarcane borer (*Diatraea saccharalis* (F.)) in Louisiana. These investigations have long pointed out that cryolite gives a significantly better control than does any other material tested against this pest.

Control experiments against first- and second-generation borers were conducted in 1941. Two types of studies were carried on: One consisted of small-plot tests of straight cryolite and various concentrations of the same material; the other, referred to as large-acreage experiments, was designed to determine the degree of control apparent at harvest time, following the use of straight synthetic cryolite.

As discussion of several experiments is included in this report, for the purpose of clarity the different experiments are treated separately and a table of results is given in each case. A brief summary of the findings is presented at the end of the paper.

Experiments Against First-Generation Borers

First-generation borers are those emerging from eggs laid by moths developing from overwintered larvae. During the entire period while first-generation borers are emerging and developing, the cane plants are small, and this fact, together with the usual light rainfall, offer optimum conditions for the application of insecticides. Two small-plot and three large-acreage tests were conducted to determine the value of dusting for control of first-generation borers.

Small-Plot Tests — A randomized arrangement was employed in these small-plot tests. Each treatment was replicated six times. Applications of cryolite dust were made at the rate of about 10 pounds per acre at weekly intervals, except for the one 5-day treatment. The dusting period in the Southdown experiment extended from April 24 to May 15 and at Oakbluff from April 22 to May 13. Dusts were applied early in the morning by means of a rotary hand gun. The differences in borer infestation were measured by the number of dead hearts and by the number of borer stages surviving treatment. It has been found that these are two good measures of borer infestation. The averages of the number of dead hearts and of live borers in the six replications of each treatment are shown in table I.

It is evident that all the cryolite treatments gave a very high degree of control. The straight synthetic cryolite was responsible for a 99.1 per cent reduction in dead hearts at Oakbluff and a 97.9 percent reduction at Southdown.

Large-Acreage Tests. — Three large-acreage tests were conducted on Reserve, Oaklawn, and Albania Plantations, for the purpose of obtaining additional data on the control of first-generation borers on a field basis and the harvest-time value of such control. It is felt that the dusted areas were not of sufficient acreage to escape a large degree of reinfestation originating in surrounding untreated cane. On Reserve Plantation the dusted area consisted of 12.3 acres of Co. 281 cane; on Oaklawn, of 11.6 acres of C. P. 29/116 and 14.4 acres of C. P. 29/320; and on Albania of 24 acres of Co. 290. Straight synthetic

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In This Issue

A Summary of Insecticide Tests on the Sugarcane Borer in 1941 ..... Cover
A.A.A. Practices Adapted to the Sugarcane Section 77
Beet Sugar Processing Industry Advisory Committee Formed 77
Sugar Control Extended 77
Sugar Statistics for the First 11 Months of 1943 78
Sugar Rations for Home Use Unchanged 79

TABLE 1

Average borer infestation, as measured by dead hearts and number of live borers, following dusting with straight cryolite or mixtures of cryolite, in experiments on Oakbluff and Southdown Plantations for control of first-generation sugarcane borers in 1941.

Treatment	Borer infestation in			
	Oakbluff experiment		Southdown experiment	
	Dead hearts	Live borers	Dead hearts	Live borers
	Number	Number	Number	Number
Check	87.8	51.5	86.8	58.8
Straight synthetic cryolite	.8	.8	1.8	.3
Synthetic cryolite, soybean flour, pyrophyllite (80-10-10)	5.8	3.3	5.5	3.0
Same as above, 5-day intervals	4.7	2.2	5.3	2.8
Natural cryolite, soybean flour, pyrophyllite (80-10-10)	2.8	1.3	1.8	.8
Synthetic cryolite, wheat flour, pyrophyllite (80-10-10)	1.0	.2	4.2	2.3

cryolite was used in all cases, and was applied four times at weekly intervals, at the rate of about 8 pounds per acre per application, beginning on April 29, 25, and 26, respectively, with the hatching of first-generation borers. All applications were made with a power ground machine, except the first on Reserve, which was applied with rotary hand guns. All the dusting was done early in the morning while the atmosphere was calm and dew was on the plants.

Three sets of records were taken in order to measure borer infestation and degree of control shortly after the last dusting, at mid-summer, and at harvest-time. The number of dead hearts was used as the measure of infestation shortly after the last dusting; the percentage of stalks bored, for the summer count; and the percentage of joints bored, for the harvest-time count. A summary of the average borer infestation at the time of each examination is shown in table 2.

TABLE 2

Average borer infestation shortly after dusting, at midsummer, and at harvesttime, in large-acreage cryolite experiments on Oaklawn and Reserve Plantations for control of first-generation sugarcane borers in 1941.

Variety and Plot	Examination			
	Preliminary		Mid-summer	Harvest-time
	Dead hearts per acre	Live borers per acre	Stalks bored	Joints bored
	Number	Number	Percent	Percent
Oaklawn Experiment				
C. P. 29/116				
Checks (av. of 4 cuts)	1,162.5	650.7	58.51	45.25
Dusted (av. of 6 cuts)	623.8	329.1	35.74	28.07
C. P. 29/320				
Checks (av. of 4 cuts)	2,209.2	1,473.4	75.04	28.63
Dusted (av. of 4 cuts)	153.4	118.2	53.72	21.48
Reserve Experiment				
Co. 281				
Checks (av. of 2 cuts)	1,102.4	700.8	79.01	76.77
Dusted (av. of 6 cuts)	49.4	38.2	50.56	54.70

It may be noted from the results that the control of first-generation borers obtained in the C. P. 29/320 and Co. 281 was exceptionally high, but was very much less in the C. P. 29/116. It is significant that the dusted areas were too small, and a considerable amount of reinfestation occurred later in the season.

The first-generation of the borer failed to develop at Albania; consequently the number of dead hearts and borer stages were insufficient to yield reliable results.

Experiments Against Second-Generation Borers

The control of second-generation borers becomes more difficult because of the much taller growth of

cane and the usual frequent and heavy rainfall during the period of dusting. Two small-plot and three large-acreage experiments were conducted to test straight cryolite and mixtures of cryolite for control of second-generation borers. A third small-plot test was undertaken to study the effect of cryolite and various common insecticides on borer control, on parasitization by *Trichogramma,* and on yield of cane.

Small-Plot Tests.—The two small-plot experiments for testing cryolite and cryolite mixtures for control of second generation borers were located on Oaklawn and Southdown Plantations, both in C. P. 29/320 cane. The same type of plot arrangement was employed as in the tests against the first generation, and the dusts were applied at the rate of about 10 pounds per acre per application. Dusting was begun on June 24 on Southdown Plantation and on June 25 at Oaklawn. Three subsequent dustings at weekly intervals were made. Borer infestation was measured by determining the percentage of stalks showing borer injury. The results of these tests are shown in table 3.

It is evident that the straight cryolite and cryolite mixtures were about equally effective against the borer. Straight cryolite accounted for about 55 per cent reduction in bored stalks at both places.

TABLE 3

Average borer infestation, as measured by percentage of stalks bored following treatments of straight cryolite and mixtures of cryolite, in experiments on Oaklawn and Southdown Plantations for control of second-generation borers, 1941.

Treatment	Stalks bored in	
	Oaklawn experiment	Southdown experiment
	Percent	Percent
Check	79.3	69.3
Straight synthetic cryolite	33.9	32.1
Synthetic cryolite, soybean flour, pyrophyllite (80-10-10)	41.9	24.6
Synthetic cryolite, wheat flour, pyrophyllite (80-10-10)	50.0	20.7
Natural cryolite, soybean flour, pyrophyllite (80-10-10)	49.2	26.8

The third small-plot test designed to determine the effect of cryolite and various common insecticides on the borer and on *Trichogramma* was located on Oaklawn Plantation, in C. P. 29/103 cane, a variety very susceptible to borer attack. It had been found in previous studies that an increase in borer infestation followed applications of bordeaux-calcium arsenate, copper arsenate, and sulfur. This study was an attempt to find the reason for an increase in borer damage following the use of certain materials, and also to determine whether cryolite had any injurious effect on *Trichogramma,* the very important insect parasite of the borer eggs.

The plot arrangement was similar to that in previous small-plot tests. The dusts were applied first on June 26, then at weekly intervals for three weeks, at the rate of about 10 pounds per acre per application. In addition to the regular counts of bored jonits to determine borer infestation, four weekly examinations of borer eggs were made to ascertain the percentage of parasitization by *Trichogramma* following the use of the various materials. On October 14, when the cane was cut for seed, the weight of the cane in each of the replicated plots was obtained by the use of a portable scale. The average parasitization during the dusting period, the average borer infestation, and the average yield of cane of the six replicates of each treatment are given in table 4.

It is significant that cryolite was highly effective against the borer in this test; that cryolite and lead

TABLE 4

Average parasitization by TRICHOGRAMMA, average borer infestation as indicated by percentage of joints bored, and average yield of cane, following treatment with synthetic cryolite and various common insecticides, Oaklawn Plantation, 1941.

Treatment	Eggs parasitized by Trichogramma	Joints bored	Yield per acre	
			Total	Gain or loss
	Percent	Percent	Tons	Tons
Untreated (check)	58.1	53.6	12.10	----
Cryolite (straight synthetic)	58.2	12.8	16.94	+4.84
Lead arsenate	63.9	35.2	14.76	+2.66
Sulfur (325 mesh)	20.4	73.3	10.16	—1.94
Copper (7%)	64.5	52.9	12.34	+0.24
Lime (hydrated)	52.8	58.2	12.10	0

arsenate gave increases in yield of 40 per cent, or 4.84 tons, and 22 percent, or 2.66 tons per acre, respectively, over the undusted plots; and that a decrease of 16 per cent, or 1.94 tons per acre, followed the sulfur treatments. While cryolite gave high control and lead arsenate fair control, copper dust seems to have had no effect on the borer, and sulfur and lime, especially the sulfur, caused an increase in borer infestation.

Cryolite, lead arsenate, and copper apparently had no effect on parasitization by *Trichogramma*, but there was a much lower degree of parasitization of borer eggs in the sulfur plots. It appears that the heavy increase in borer infestation resulting from dusting with sulfur was due mainly to its effect on parasitization by *Trichogramma,* so far as could be determined. Sulfur acts as a repellent to these tiny parasites. If the difference in borer infestations and resulting yield of cane in the sulfur-treated plots and check plots is a measure of the control value of *Trichogramma*, then these parasites are accounting for a very substantial measure of control of the sugarcane borer in Louisiana.

Large-Acreage Tests.—Three large-acreage experiments, two on Alice C. Plantation and one on Justine, were employed to test control of second-generation borers with straight synthetic cryolite and the harvest-time value of such control. Experiment **1** on Alice C. consisted of 17 acres of Co. 290 and **2** of 12 acres of the same variety. Only two weekly application of dust were made in experiment **1**, beginning June 27, and three in experiment **2**, beginning June 28, at about 12 pounds per acre per application. On Justine Plantation the test area contained about nine acres and was planted in C. P. 29/116 cane. Four weekly applications were made on this area, beginning on June 29, at the rate of about nine pounds per acre per application, the first with power machine and the three subsequent applications with rotary hand gun.

The results given in table 5 show that cryolite reduced the number of stalks bored by second-generation borers on the Alice C. plots by about 36 percent in Experiment **1** and 39 percent in Experiment **2**, and by approximately 48 percent on the Justine area. Where cryolite was used, there was 20 to 24 percent less damage at harvest-time in the dusted areas on Alice C. and 31 percent less damage on Justine Plantation.

Control of Borers in Summer-Planted Cane

Two tests were conducted—one on Reserve Plantation for comparing dusting and spraying, and one on Raceland for studying the effect of cryolite and various common insecticides on the borer and on *Trichogramma.* In both experiments dusting and spraying were begun on September 9, at which time the first borers were beginning to hatch from eggs on these plants, and were continued at weekly in-

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TABLE 5

Summary of sugarcane borer infestations at midsummer and at harvesttime in large-acreage cryolite experiments for control of second-generation borers, 1941.

Variety and Plot	Examination at	
	Midsummer	Harvesttime
	Stalks bored	Joints bored
	Percent	Percent
Alice C. Experiment No. 1		
Co. 290		
Checks (av. of 4 cuts)	56.19	36.03
Dusted (av. of 6 cuts)	36.18	29.00
Alice C. Experiment No. 2		
Co. 290		
Checks (av. of 4 cuts)	57.67	49.27
Dusted (av. of 5 cuts)	35.36	37.54
Justine Experiment		
C. P. 29/116		
Checks (av. of 2 cuts)	36.98	41.54
Dusted (av. of 3 cuts)	19.12	28.50

tervals until six applications had been made. The results of the Reserve experiment are given in table 6. Synthetic-cryolite spray did not give quite so good control as the straight synthetic-cryolite dust, but it did prove slightly more effective than the 80-10-10 mixtures. Straight synthetic cryolite was responsible for a 89.7 percent reduction in number of dead hearts and a 90.0 per cent reduction in number of live borers in the borer-killed plants.

TABLE 6

Borer Infestation, as measured by average number of dead hearts and number of live borers per plot, following treatments of straight cryolite and mixtures of cryolite, in experiment on Reserve Plantation, for control of borers in summer-planted cane, 1941.

Treatments	Borer infestation	
	Dead hearts	Live borers
	Number	Number
Check, no treatment	38.7	32.8
Straight synthetic cryolite	4.0	3.0
Synthetic cryolite, soybean flour pyrophyllite mixture (80-10-10)	9.3	7.3
Synthetic cryolite, wheat flour, pyrophyllite mixture (80-10-10)	7.3	5.5
Natural cryolite, soybean flour, pyrophyllite mixture (80-10-10)	6.7	4.7
Cryolite spray (6 lbs. cryolite, 8 oz. spreading agent to 150 gal. water	5.8	4.2

The results of the Raceland experiment, as shown in table 7, revealed that an increase of 35.1 percent reduction in number of dead hearts followed the application of sulfur and lime, respectively. Cryolite accounted for a 95.8 per cent reduction in dead hearts, and lead arsenate for a 71.6 percent reduction. The parasitization of host eggs by *Trichogramma* was extremely high in this field, averaging about 90 percent in the check plots. It is again important that cryolite had no injurious effect on *Trichogramma*.

Summary

Straight synthetic cryolite, and also 80 percent mixture of both synthetic and natural cryolite with inert carriers, at the rate of about 10 pounds per acre per application, were tested against first-generation borers at two locations, four applications of dust being made at each location at 5-day and weekly intervals, beginning on April 22 and 24, respectively. Straight cryolite was slightly more effective than the mixtures, but all the treatments resulted in a very high degree of control. The straight cryolite accounted for 97 and 98 percent reductions in damage by first-generation borers at two places. Three large-acreage tests with four weekly applications of straight synthetic cryolite against first-generation borers, beginning on April 25, 26, and 29, respectively, at the rate of about 8 pounds per acre per application, showed 92 and 95 percent reductions in first-generation damage in varieties C. P. 29/320 and Co. 281, respectively, and only about 46 percent reduction in C. P. 29/116. The control at harvest-time was considerably less, indicating a heavy reinfestation by borers from adjacent fields.

In two small-plot tests for control of second-generation borers, four weekly applications of straight cryolite and 80-percent mixtures of synthetic and natural cryolite with inert carriers were made beginning on June 24 and 25, respectively, at the rate of about 10 pounds per acre per application. All

TABLE 7

Average borer infestation, and parasitization by TRICHOGRAMMA following treatments of synthetic cryolite and various common insecticides on borers in summer-planted cane on Raceland Plantation, 1941.

Treatment	Borer infestation		Eggs parasitized by Tricho-gramma
	Dead hearts	Live borers	
	Number	Number	Percent
Check, no treatment	40.7	31.8	91.32
Cryolite, straight synthetic	1.7	1.3	90.59
Lead arsenate	12.0	7.7	91.01
Sulfur	55.0	47.5	82.98
Copper dust (7 percent) derived from tribasic copper sulfate	42.2	38.8	91.34
Lime	55.0	43.7	89.31

these gave significant control of second-generation borers, with very little difference among the treatments. Straight synthetic cryolite reduced the number of bored stalks by about 55 percent. In three large-acreage plots where 2, 3, and 4 weekly applications of straight synthetic cryolite were made, beginning on June 27, 28, and 29, respectively, at about 12 pounds per acre per application on the first two and 9 pounds on the third plot, the reduction in number of stalks bored by second-generation borers amounted to about 36 and 39 per cent in the first two plots and 48 percent in the third plot, with an average difference in number of joints bored at harvest time of about 25 per cent in favor of the dusted plots.

An experiment designed for studying the effect of cryolite, lead arsenate sulfur, lime, and 7-percent copper derived from tribasic copper sulfate, not only on parasitization of borer eggs by *Trichogramma*, but also on abundance of borer eggs, on borer infestation, and on yield of cane, was conducted on second-generation borers on Oaklawn. Four weekly applications of the respective insecticides were made, beginning on June 26, at the rate of about 10 pounds per acre per application. Both cryolite and lead arsenate gave significant control of borers and neither had any injurious effect on *Trichogramma*. Sulfur was responsible for a substantial increase in borer infestation, which was associated with a significant reduction in natural parasitization of borer eggs by *Trichogramma*. Cryolite was responsible for an increase in yield of 40 per cent, or 4.84 tons of cane per acre, and lead arsenate accounted for an increase of 22 percent or 2.66 tons. Sulfur actually decreased the yield by 16 per cent, or 1.94 tons per acre.

In first growth of summer-planted cane, straight synthetic cryolite, 80 percent mixtures of cryolite with an inert dust (pyrophyllite), and a cryolite spray consisting of 6 pounds of synthetic cryolite and 8 ounces of a spreading agent to 150 gallons of water all gave significant control of the borer. Straight synthetic cryolite dust was responsible for slightly better control than the spray, which was in

turn a little more effective than the mixtures. In a second small-plot experiment in a summer-planted cane, it was found that both sulfur and lime caused a 35.1 percent increase in numbers of dead hearts, and straight synthetic cryolite reduced the number of dead hearts about 96 percent. A lower natural parasitization by *Trichogramma* followed both sulfur and lime treatments.

[1] Joint cooperative work. The positions of the authors' names do no t indicate seniority.

Official Release

(Beet Sugar Processing Industry Advisory Committee Formed)

The formation of a Beet Sugar Processing Industry Advisory Committee was announced by the Office of Price Administration on January 6th.

The committee will consult with and advise OPA on pricing problems affecting beet sugar, as they arise.

The eleven members named to this OPA committee are associated with an identical committee of the War Food Administration. They are:

A. W. Beebe, Treasurer, Lake Shore Sugar Company, Detroit; F. J. Belcher, Jr., President, Spreckles Sugar Company, San Francisco; H. A. Benning, President, Amalgamated Sugar Company, Ogden, Utah; Wiley Blair, Jr., President, Holly Sugar Corporation, Colorado Springs, Colo.; Frank A. Kemp, President and General Manager, Great Western Sugar Company, Denver; R. E. Lies, Manager, Menominee Sugar Company, Green Bay, Wis.; W. W. Patterson, Sales Manager, Michigan Sugar Company, Saginaw, Mich.; Arthur A. Schupp, Vice-President, Paulding Sugar Company, Paulding, Ohio; J. Stewart, Vice-President, the Garden City Company, Garden City, Kan.; Douglas Scalley, Vice-President and General Manager, Utah-Idaho Sugar Company, Salt Lake City, Utah, and W. N. Wilds, President, American Crystal Sugar Company, Denver.

A.A.A. Practices Adapted to the Sugarcane Section

By A. C. Smith, Administrative Officer in Charge and R. A. Wasson, Extension Agronomist

The *drainage practice* in particular should be of interest and assistance on practically every cane farm. This practice provides a payment of 8 cents per cubic yard of dirt moved in connection with the construction, enlargement, or cleaning out of lateral ditches and lead canals. Not only can the regular or fixed farm allowance be earned by carrying out the drainage, but an additional amount equal to the regular allowance can be earned by ditching. Other than this there are no limitations on the drainage practice. However, the specifications for the practice should be carefully followed. Those not already familiar with the terms of this practice should consult their county agent or parish triple A administrative officer without delay. The State Committee is making an effort to get the specifications changed somewhat for cleaning out drains already established but no official action has as yet been secured.

One special feature of the drainage practice is that two or more adjoining farms may pool both their regular and special drainage allotments for draining purposes in order to construct a completed drainage system which may involve more than one farm. The forms required for pooling allotments for drainage are being prepared now and will be in the parish offices within a short time.

The triple A is in a position to offer drainage assistance as a conservation service on a contract basis if there are any interested bidders.

It should be understood by all farmers that while they may wish to use a portion or all of their regular farm allowance for drainage purposes they are not required to do so. If no portion of the regular allowance is used for drainage, a special fund, over and above the regular allowance and equal to the regular allowance can still be earned for drainge.

Other timely triple A practices are (1) clearing land for pasture (2) seeding lespedeza and Dallis grass in pastures and (3) planting soybeans for turning under. Consult your local county agent or parish triple A administrative officer for details.

Official Release

(Sugar Control Extended)

The Office of Price Administration recently extended the scope of the sugar rationing program to bring under control the use of imported sugar-containing products such as syrup and "candy" crystals, used industrially in place of rationed cane and beet sugar. Until now, these products have been ration free.

Beginning May 1, the ration-free use of imported sugar-containing products will be limited to the amount used during the corresponding period of 1941. Ration currency must be surrendered to the local War Price and Rationing Board before greater amounts can be used.

The order does not limit the use of sugar products in transit or in the possession of a manufacturer on May 1, provided these products were already within the United States at that time and had been released by the Collector of Customs. The order also places no controls over the use of imported sugar-containing products by consumers.

Under the earlier regulations, OPA placed no restriction on the amount of imported sugar-containing products that a manufacturer might use. These products were not defined as "sugar" in the regulations, and did not come under rationing control. A manufacturer who used imported syrup or "candy" as a substitute for sugar was allowed an unlimited use of these imported sugar products and his full quota of rationed sugar as well.

However, sharp increases in the amount of sugar-containing products imported for purposes for which sugar is ordinarily used are causing serious dislocations and inequalities in the sugar-rationing system. Not only do these products compete for shipping space needed for imported sugar which is distributed equitably under rationing, they also cut into the supply of sugar available for import into this country, particularly from Cuba.

Any decrease in the import of these products as the result of today's action will have the effect of making additional shipping space available for sugar. It will also increase the total amount of sugar available for import to the extent that it reduces the amount now diverted for the manufacture of "syrup" and "candy" for further processing.

A registered industrial or institutional user of sugar who desires to use more imported sugar-containing products than he used in any period in 1941 must first surrender to his ration board ration currency equal in weight value to the additional amount.

Any amounts of these products not used during

the allotment period for which they were allowed may be used during any subsequent allotment period.

Records must be kept by all persons who import, use, sell, or deliver, imported sugar-containing products as follows:

1. Persons who import sugar-containing products or receive them from the Collector of Customs, must keep a record of the amount of sugar contained in the imported products. Beginning June 1944, such persons must prepare and sign and keep for a period of two years, a duplicate record showing:
   (a) The amount of these products imported during the preceding months.
   (b) The names and addresses of persons to whom he delivered these products during the preceding months, and the amount of each delivery.

2. Any person who uses imported sugar-containing products must keep the following records:
   (a) The amount of sugar contained in the imported sugar products used by him in each calendar month, beginning May, 1944.
   (b) A person who wishes to use the same amount of these products in 1944 as he used in 1941 must keep a record of his 1941 use, by month.
   (c) A person who wishes to use imported sugar-containing products now in his possession or in transit to him on May 1, 1944, must keep a record of the amount of such products.
   (d) Within 10 days after the close of each allotment period, any person who uses sugar-containing products must report to the district OPA office the amount of these products used by him during the previous allotment period. His first report must include a statement of the amount he used during each quarter of 1941.

3. A person who sells imported sugar-containing products must see to it that the containers in which they are packaged are clearly marked to show that the product was imported. Invoices and sales slips covering transfers or sales must be similarly marked.

4. Any person who delivers such product must also keep a record of the transfer showing: (1) the amount of sugar in the imported product he delivered; (2) the date of delivery; and (3) the name and address of the person to whom the delivery was made.

(Amendment No. 1 to Revised Ration Order No. 3; effective May 1, 1944)

Official Release

(Sugar Statistics for the First 11 Months of 1943)

Distribution of sugar by the primary distributors in the United States during January-November, 1943, as compared with the corresponding period of 1942, was as follows:

	1943 (short tons, raw value)	1942
Refiners' raw sugar (table 1)	14,118	4,485
Refiners' refined sugar (table 2)	4,280,870	3,176,837
Beet sugar processors (table 2)	1,451,548	1,590,938
Importers' direct-consumption sugar (table 3)	480,706	446,117
Mainland cane mills' direct-consumption sugar (table 4)	109,981	66,237
Total	6,337,223	5,284,614
Deliveries for export[1]	428,965	195,521
Distribution for consumption in Continental United States	5,908,258	5,089,093

The distribution of sugar for local consumption in Puerto Rico during January-November, 1943, was 88,156 tons and for the Territory of Hawaii, 56,883 tons. (Table 5.)

Stocks of sugar on hand November 30 were as follows:[2]

	1943 (short tons, raw value)	1942
Refiners' raw	402,164	196,126
Refiners' refined	175,762	242,153
Beet sugar processors	768,506	1,035,878
Importers' direct-consumption sugar	81,370	66,501
Mainland cane factories	84,919	92,060
Total	1,512,721	1,632,718

[1]Department of Commerce data on actual exports not available for publication. Deliveries for export exceed actual exports since they include the stocks held against commitments for our allies.

[2]Not including raws for processing held by importers other than refiners, nor raws held by refiners but not yet reported by them on Form SS-15A, which amounted to 29,462 short tons, commercial value, in 1943, and 59,627 short tons, commercial value, in 1942.

Sugar Statistical Reports

Table 1

Vol. 10, No. 11—January-November, 1943

Raw Sugar: Refiners' stocks, receipts, meltings and deliveries for direct consumption for January-November, 1943 (short tons, raw value):

Source of supply	Stocks on Jan.1,'43	Receipts	Meltings	Deliveries for direct consumption	Lost by fire	Stocks on Nov. 30,'43
Cuba	152,272	2,684,368	2,631,033	4,961	279	200,367*
Hawaii	17,697	833,859	742,820	1,916	40	106,780
Puerto Rico	83,434	488,890	538,232	2,162	0	31,930
Philippines	4,407	0	4,230	0	1	176
Continental cane	91,716	212,177	241,465	5,078	8	57,342
Virgin Islands	0	2,888	2,829	0	10	49
Other countries	10,289	75,041	79,779	1	30	5,520
Miscellaneous (sweepings, etc.)	0	113	113	0	0	0
Total	359,815	4,297,336	4,240,501	14,118	368	402,164

Compiled from reports submitted by sugar refineries on Form SS-15A.

*Includes 50,178 tons in customs' custody.

Table 2

Stocks, production and deliveries of cane and beet sugar by United States refiners and processors, January-November, 1943 (short tons, raw value):

	Refineries[1]	Domestic Beet Factories
Stocks of refined Jan. 1, 1943	270,605	1,292,728
Production	4,186,027	927,326
Deliveries	4,280,870	1,451,548*
Stocks of refined Nov. 30, 1943	175,762	768,506

Compiled from reports submitted on Form SS-16A and SS-11C by the sugar refineries and beet sugar factories.

[1]The refineries' figures are converted to raw value by using the factor 1.063308 which is the ratio of meltings of raw sugar to refined sugar produced during the years 1941 and 1942.

*Larger than actual deliveries by a small amount representing losses in reprocessing, etc.

Table 3

Stocks, receipts and deliveries of direct-consumption sugar from specified areas, January-November, 1943 (short tons, raw value):

Source of supply	Stocks on Jan.1,'43	Receipts	Deliveries or usage	Stocks on Nov.30,'43
Cuba	68,583	360,046	364,488	64,141*
Hawaii	0	0	0	0
Puerto Rico	6,791	101,343	90,905	17,229
Philippines	2,816	6	2,822	0
Other foreign areas	499	21,992	22,491	0
Total	78,689	483,387	480,706	81,370

Compiled from reports and information submitted by importers and distributors of direct-consumption sugar on Forms SS-15B and SS-3.

*Includes 6,493 tons in customs' custody.

Table 4

Mainland cane mills' stocks, production, and deliveries, January-November, 1943 (short tons, raw value):

Jan.1,1943	Production	Deliveries For Direct Consumption	Deliveries For Further processing	Stocks on Nov.30,1943
134,393	290,772	109,981	230,265	84,919

Table 5

Distribution of sugar for local consumption in Puerto Rico and the Territory of Hawaii, January-November, 1943 (short tons, raw value):

Puerto Rico	88,156
Hawaii	56,883

Official Release

(Sugar Rations for Home Use Unchanged)

Sugar rations for home use will remain the same for another two and a half months, the Office of Price Administration announced recently.

Sugar Stamp Number 30 in War Ration Book Four became valid on January 16, 1944, and will be good for buying five pounds of sugar through the end of March. Stamp No. 29, expired on January 15th.

The announcement that the consumer sugar ration will be maintained at present levels for another ration period closely follows the recent statement by OPA that rations for institutions such as hotels and restaurants will also remain the same for the time being and that industrial users will return to their former allowance of 80 per cent of their 1941 base when the present "bonus" period ends on December 31.

This general stability in sugar rations, for home use as well as for the trade, is based on the estimated civilian allocation for the first quarter of 1944, OPA explained. This allocation has tentatively been set by the War Food Administration at 1,044,000 tons, or about 100,000 tons more than the amount of sugar that was actually distributed for civilian use during the comparable quarter of 1943.

However, OPA points out that this difference in 1944 allocations as compared with 1943 use will be taken up in a number of different ways, most important of which are as follows:

1. In the first quarter of 1943, industrial users were receiving 70 per cent of the amount of sugar they used in the base period in 1941; in 1944, they will be using 80 per cent of the amount used in the base period.

2. In the first quarter of 1943, manufacturers of jams, jellies, marmalades and other fruit spreads were receiving 70 per cent of their 1941 use, just like most other industrial users. In 1944, in order to increase the output of these foods, they will be allowed as much sugar as they need to utilize all the fruit and production facilities at their disposal.

3. A number of sugar-containing products such as frozen apple sauce, frozen grapefruit sections, and baked beans which were either not being made commercially at all in 1943 or only in limited amounts, are now requiring more sugar.

4. Supplementary allotments of sugar have been allowed for the manufacture of drugs and pharmaceuticals.

(Amendment 109 to Ration Order 3—Sugar—to be issued January 3, 1944, effective January 7, 1944.)

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SUGAR BULLETIN

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Vol. 22 NEW ORLEANS, LA., MARCH 1, 1944 No. 11

Louisiana 4-H Clubs

Louisiana 4-H Clubsters, in striking contrast with the youth movement in Germany, are being trained NOT to fight wars, but to help provide food, feed and funds that their nation might meet any emergency—economic or controversial. Louisiana 4-H'ers, numbering 35,032, are part of a vast army of 1,700,000 rural recruits in the 48 states who are really makink agricultural history.

Not only do these youngsters till the soil, grow the livestock, and raise chickens, but they conserve surplus vegetables, meats and fruits, guide the nutritional habits of their families and generally improve home management practices.

But that's not all. During March they will sponsor a special war bond campaign to raise $2,275,800 for the purchase of a Liberty ship. The campaign will be conducted in connection with the annual observance of National 4-H Mobilization Month and will be known as "Louisiana 4-H Clubs Name-a-Liberty Ship Campaign." On the successful conclusion of the special war bond sales effort the Maritime Commission at Washington will select a name for the ship from a list of five persons, not now living, who have rendered conspicuous service to Louisiana agriculture and rural youth.

Similar campaigns have been sponsored by 4-H Clubs in other states of the Union, to afford boys and girls an opportunity of participating in the actual purchasing of a war vessel. A recent event of the kind was the christening of a Liberty ship sponsored by the 4-H clubs of South Carolina. The ship was named after the late Congressman A. Frank Lever, one of the authors of the Smith-Lever act, under which the 4-H movement was developed.

The campaign will be conducted in the parishes by the agricultural extension agents, in cooperation with local leaders, representative 4-H members and the parish war finance committee.

Martha Rachel Wiggins, Franklin parish, is one of Louisiana's most outstanding club members. She was adjudged Louisiana's food preservation champion in 1943 and made a trip to the Chicago Club Congress. Martha Rachel is literally keeping the home fires burning while her brothers are at war. She uses much of one of Louisiana's major crops in conserving her fruits and vegetables.

THE SUGAR BULLETIN

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Marcel J. Voorhies, Editor

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in which are consolidated

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.

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In This Issue

4-H Clubs	Cover
1943-44 Production Report (U.S.D.A.)	82
Farm Labor Program Adopted	82
High Lug Tires	82
CCC Extended	82
Recent Changes in Selective Service Procedure	83
Prisoners of War Labor	83
Sugarcane Borer Experiments	84

1943-44 Production Report (U.S.D.A.)

Total Louisiana Cane Ground	5,510,117
Sugar Made and Estimated	*Tons, Raw Value*
Raw Sugar	313,726.5
Refined Sugar	56,694.0
Plantation Granulated	12,086.5
Clerified	4,392.7
Turbinado	32,273.8
Sugar in Molasses, Estimated	2,923.5
Total Sugar Made and Estimated	422,097.0
First Molasses	5,936,230 Gallons
Second Molasses	4,754,073 Gallons
Sirup	3,577,137 Gallons
Blackstrap Made and Est. at 80 Brix	30,887,281 Gallons
Sugar Estimated in Commercial Molasses	14,171.0

Farm Labor Program Adopted

(By C. J. Bourg)

The perplexing problem of farm labor received substantial encouragement when Congress appropriated $30,000,000 to be expended by the War Food Administrator to insure labor on farms throughout the Nation. The War Food Administrator has been given complete authority over the organization of the program and the expenditure of funds; however, Congress recommended that agreements be made whereby the organization and facilities of the Agricultural Extension Service throughout the Nation be made use of with respect to movements of migratory workers. The War Food Administrator is directly responsible for interstate movement of workers, as well as contracting for and transporting foreign agricultural labor.

The Office of Labor in WFA in cooperation with the Extension Service has called regional meetings for the purpose of discussing local problems and bringing together the State Extension Directors and staffs to agree upon details and familiarize themselves with the Federal policies to be followed. A regional meeting was held at Memphis on February 21, 22 and 23.

The use of prisoners of war will continue to remain under the jurisdiction of the War Department, but matters of local sub-camps and allocation of workers will be handled in cooperation with the State Agricultural Extension Service.

High Lug Tires

The Office of the Rubber Director reports that the Firestone Company has developed a new synthetic rubber which will give satisfactory service in high lug tires. Other rubber companies are making similar tests. The Rubber Director reports that 192 high lug tires were authorized for manufacture in January and February, and the prospect is that monthly allocations will permit the manufacture of about 700 new high lug tires before October, 1944. The first sets of high lug tires have been tested under sugarcane field conditions and preliminary results are encouraging. There has not yet been time for a complete test, but the results are considered sufficiently satisfactory to justify the Rubber Director in permitting the manufacture during 1944 of 700 or more high lug tires for use in the cane and rice fields of Louisiana.

CCC Extended

Following the veto of the Subsidy Bill, Congress has passed a resolution to continue the Commodity Credit Corporation until June 30, 1945. This means that the CCC has authority and funds to carry on its commitments for a 1944 sugarcane program. In the Subsidy Bill Congress had specifically exempted sugarcane and sugar beets from the prohibition against subsidy payments on foods. This amounts to a declaration of congressional intent to authorize incentive payments for the maximum production of sugar in the continental United States, as an essential part of the war effort. The CCC officials have asked the American Sugar Cane League to present recommendations concerning the form and procedure to be used in connection with the 1944 sugarcane program. Meetings are being held this week to discuss the experiences with the 1943 program to be used as a basis for making improvements in the 1944 agreement.

Recent Changes in Selective Service Procedure

As a result of a conference with Brigadier General Raymond H. Fleming State Director, and Lieutenant Colonel J. Lester White, Chief, Review and Appeal Division, Selective Service State Headquarters, the following article was prepared and presented to the Chairman of the Educational Committee of the American Sugar Cane League for inclusion in the Sugar Bulletin for the benefit of employers and employees.

The purpose of this article is to elaborate upon several recent changes in the procedure to be followed and adhered to by employers in attempting to secure occupational deferment for employees.

It is now common knowledge that the Selective Service System has been directed to induct into the armed forces pre-Pearl Harbor fathers. This has been and is now being accomplished. Accordingly, it behooves all employers to pursue their legal rights in filing DSS Form 42 or DSS Form 42A at the earliest possible moment.

Subsequent to the filing of DSS Form 42 or DSS Form 42A, the Local Board of the registrant considers the individual merits of the case and, in its discretion, determines where the registrant could best serve the nation, that is, in the armed forces or in his present civilian occupation. The right to grant or deny an occupational deferment reposes in the Local Board, subject to the usual right of appeal to the Board of Appeal for further review.

After the Local Board has classified a registrant on whom his employer has filed DSS Form 42 or DSS Form 42A, it mails to him a Notice of Classification (DSS Form 57) and to the employer a Classification Advice (DSS Form 59). If either party is dissatisfied with the classification assigned by the Local Board, he is afforded a legal right to have the record reviewed by the Appeal Board. This is done by filing with the Local Board a written notice of appeal, which must be received by the board within ten days from the mailing date of the Local Board's notification.

At this stage of the proceeding, recent changes have been enacted. In lieu of the case being transmitted directly to the Board of Appeal, the Local Board first issues an order (DSS Form 215) whereby the registrant is given a preinduction physical examination at the induction station. He reports on a certain date and undergoes a final type physical examination, whereupon, he is designated as either acceptable for service or rejected.

If rejected, the Local Board reclassifies the registrant into Class IV-F on physical grounds, thus *"ipso facto"* cancelling the appeal. If he is found acceptable for service, he is returned to the Local Board for a minimum period of twenty-one days prior to his actual induction. In the event an appeal has been entered, the Local Board prepares the registrant's case for transmittal to the Board of Appeal having jurisdiction over the area in which the registrant is employed. This is accomplished by the preparation and inclusion in the registrant's file of DSS Form 66 wherein the Local Board determines the registrant's principal place of employment. By "principal place of employment" is defined to be the situs where the registrant is actually physically present performing his duties.

Further recent changes are in cases appealed by law. When the Local Board, after weighing all of the facts in the case, grants an occupational deferment (other than agricultural) and the registrant's principal place of employment and Local Board of jurisdiction are in different appeal board areas, the Local Board prepares and incorporates in the file DSS Form 66. The case is then transmitted to the Board of Appeal having jurisdiction over the registrant's principal place of employment for decision. Where the case is appealed by law, there is no preinduction physical examination as in the case where an appeal is entered from a 1-A classification.

It is a well-known fact that there is an acute shortage of manpower in the armed forces. Employers are urged and exhorted to utilize every means possible to replace registrants vulnerable to the Selective Training and Service Act, as amended, with individuals not subject to military services. There must be a balancing of the equities between the armed forces and civilian activities in direct war production or in support of the war effort. However, it must be realized that there is a real need for men in the armed forces and registrants must be "necessary" men in such civilian activities before occupational deferments will be granted.

In conclusion, employers are cautioned that once they have exercised the right of filing DSS Form 42 or DSS Form 42A, it is obligatory upon them, as well as their patriotic duty to promptly notify the Local Board of the termination of employment. Thus, employers assist in keeping the Local Board currently informed of the registrant's status.

Prisoners of War Labor

The following letter was received by the Educational Committee of the American Sugar Cane League and by all parties who contracted for prisoners of war:

16 February 1944.

Gentlemen:

Before Prisoners of War are returned to Side Camps to provide labor for spring planting and other farm work in southern Louisiana, a considerable amount of planning is required in this office.

Arrangements must be made to provide transportation, supplies, repairs, select the personnel, rearrange work projects at this camp, and many other details which will require some time.

It will materially assist this Headquarters in completing our plans if you will furnish information as to your needs by completing the attached form and returning it to this Headquarters in the self-addressed envelope enclosed.

I wish to take this opportunity of thanking you for your willing co-operation during the time you employed the prisoners of war, and I am looking forward to a continuance of our pleasant relationship in the very near future.

Yours very truly,

(Signed) FRANK LOCKHEAD,
Colonel, Infantry,
Commanding.

Inc:
Form for PW Labor.

ARMY SERVICE FORCES
Eighth Service Command
Prisoners of War Camp
Camp Livingston, Louisiana

INFORMATION DATA TO BE INSERTED BELOW AND FORWARDED TO COMMANDING OFFICER, PRISONER OF WAR CAMP, CAMP LIVINGSTON, LOUISIANA.

1. Number of Prisoners of War you will need.....
2. Estimated date of completion of your work.....
3. Type of work for which you will need prisoners of war.....
4. Probable number of plantations or farms on which you propose to use prisoners of war.....
5. Maximum distance of travel from Side Camp to the furthest work project.....
6. Expected date you will commence work.....

REMARKS: (If Any):

(Contractor)

(Address)

Sugarcane Borer Experiments*

By J. W. Ingram, *U. S. Department of Agriculture Agricultural Research Administration, Bureau of Entomology and Plant Quarantine, and* A. L. Dugas, *Louisiana Agricultural Experiment Station.*

Various insecticides have been tried as means of controlling the sugarcane borer (*Diatraea saccharalis* (F.)), but prior to the testing of cryolite none had given a sufficiently high degree of control to justify its use on a commercial scale. Cooperative work begun in 1937 by the Bureau of Entomology and Plant Quarantine of the United States Department of Agriculture and the Louisiana Agricultural Experiment station has shown that cryolite usually can be depended upon to kill 90 per cent or more of borers of the first generation (1) (2) (3).

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Experiments on First-Generation Borers

Beginning in and since 1938, large-acreage experiments have been conducted cooperatively by the agencies above mentioned to determine the harvest-time benefit of dusting with cryolite to kill first-generation borers. Such large-acreage experiments were conducted in 1942 on Reserve, Cypremort, Oaklawn and Little Texas Plantations[2]. Synthetic cryolite containing not less than 85 percent sodium fluoalumninate was used in these experiments, unless otherwise stated.

Reserve Plantation.—On Reserve Plantation 460 acres of sugarcane were dusted four times with undiluted synthetic cryolite, and 155 acres were dusted three times, at weekly intervals beginning on April 18, 1942. The dust was applied at the rate of 8.8 pounds per acre per application by the use of three power dusting machines. These were pulled by tractors in dry weather and by mules in wet weather. During the first few days of dusting two nozzles were placed over each row with each duster covering a three-row swath. During the remainder of the dusting period only one nozzle per row was used and a five-row swath was dusted. All dusting was done between 3 and 9 a. m. while the plants were wet with dew and the air was still. All cane on Reserve Plantation was dusted with the exception of 176 acres of plant cane in which very few first-generation borer eggs were found. A part of this plant cane, which later showed large numbers of borer dead hearts, was rogued of the dead hearts.

After the dusting, examinations were made to determine the borer infestation. All dead hearts in 3 or 4 rows of cane, or on 1,500 to 4,000 feet of row, in each field were cut out and examined for borer stages. First-generation borer injury almost always results in a dead heart.

A comparison of dusted and undusted summer-planted cane after the dusting was completed indicated that the infestation in the former had been reduced 83 per cent. The actual reduction was probably greater than that, however, because some cryolite dust drifted onto the cane in the undusted area, which was only 8 rows wide and bordered on both sides by dusted cane, and presumably reduced the infestation somewhat in that area also. The control in other cane on this plantation was undoubtedly higher, and, judging from previous experiments, it may have been over 90 per cent.

Harvest-time examinations made on October 16 consisted of counting the number of bored and unbored joints of cane in 100 stalks taken at random throughout a field. The results are listed in table 1.

TABLE 1
Percentage of sugarcane joints bored on Reserve Plantation, harvest-time examination, 1941 and 1942.

Variety and location	Percent joints bored
Average for 6 locations in 1941	55.0
1942	
C. P. 28/19, front cut 1	29.1
C. P. 28/19, front cut 2	24.6
Co. 290	5.0
C. P. 28/19 back cut 1	7.2
C. P. 29/320	27.0
C. P. 29/103 plant cane	46.3
Co. 281 2nd stubble, cut 1	50.9[3]
Co. 281 2nd stubble, cut 2	39.7[3]
Co. 281 medium land	29.6
C. P. 28/19 medium land	18.3
Average for 10 locations in 1942	27.8
[3] Harvesttime percentage of joints bored in same fields in 1941 (average)	68.0

It may be seen from table 1 that the percentage of joints bored on Reserve Plantation in 1942 was only about half that in 1941, although borer infestation in Louisiana was somewhat higher in 1942 than in 1941. In table 2 the average yield on Reserve Plantation in 1942 is compared with the average yield in 1941 when this plantation was not dusted, and with yields on the adjacent La Place and Belle Pointe Plantations which were not dusted in either year.

There was an average gain of 3.79 tons of cane per acre on Reserve over the average of the increases on La Place and Belle Pointe Plantations in 1942. Since the cane on Reserve normally suffers heavier borer

* Large-Acreage Experiments in 1942 for the Control of the Sugarcane Borer in its First Generation, and Results of an Experiment in Planting Dusted Seed Cane.[1]

[1] Joint Cooperative work. The position of the authors' names does not indicate seniority.

[2] Thanks are due the Division of Domestic Plant Quarantines, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture, for lending the dusters used in the experiments on the first three plantations.

TABLE 2
Yield data on Reserve and adjacent plantations in 1941 and 1942.

Plantation	Tons of cane per acre			Pounds of sugar per acre		
	1941	1942	Increase	1941	1942	Increase
Reserve	16.42	21.93	5.51	3,634	5,277	1,643
La Place	20.04	21.59	1.55			
Belle Pointe	18.96	20.86	1.90			

injury than that on La Place and Belle Pointe Plantations, Reserve might not have gained in yield under the heavy borer infestation in 1942, as did La Place and Belle Pointe, if it had not been dusted. Thus the gain due to dusting probably was greater than 3.79 tons of cane, or 1,643 pounds of sugar, per acre. This gain must have resulted primarily from borer control, although a part of the difference may have been due to better growing conditions on Reserve Plantation.

Cypremort Plantation.—On Cypremort Plantation 101 acres of cane were dusted four times at weekly intervals with undiluted synthetic cryolite at the rate of 9 pounds per acre per application beginning on April 25, 1942. This dust was applied with a three-row dusting machine equipped with two nozzles per row. In examinations made during June for dead hearts and live borer stages it was found that about 80 percent control had been obtained in the most heavily infested area, and a higher percentage of control apparently was obtained in the most lightly infested areas. Results of examinations at harvest-time to determine percentage of joints bored are given in table 3.

Table 3 indicates that the percentage of joints bored at harvest-time apparently was 51.7 percent less

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TABLE 3

Percentage of sugarcane joints bored in dusting experiment on Cypremort Plantation, harvesttime examination, 1942.

Location	Dusted area: Percent joints bored	Location	Check area: Percent joints bored
Tier 1	47.9	Tier 1	80.2
Tier 2	18.8	Tier 2	81.5
Tier 3	25.3	Tier 3	41.3
Tier 4	39.6	Across bayou	73.2
Mill area	35.3		
Average	33.4	Average	69.1

in the dusted area than in the undusted parts. In 1941 on Cypremort Plantation there had been a loss of 10.8 percent in converting actual tons harvested into equivalent tonnage of cane of normal sucrose content, whereas in 1942, when some of the most heavily infested cane was dusted, there was a gain of 3.8 percent in converting actual tons of cane into equivalent tonnage of cane of normal sucrose content. A gain of 14.6 percent in converted tons on Cypremort in 1942 over 1941 is thus indicated. On the other four plantations composing the Cypremort group there was a gain of 4 percent in converted tons harvested to tons containing normal sucrose content in 1941 and a gain of 9.2 percent in 1942. Thus the gain for these plantations due to conversion was greater by 5.2 percent in 1942 than in 1941, and the gain in 1942 as compared with that in 1941 was greater by 9.4 percent for Cypremort Plantation than it was for the other four plantations of the Cypremort group. On the basis of the total tonnage produced on Cypremort Plantation this added gain amounted to 799 tons of cane. A small part of this gain might be attributed to the roguing out of dead hearts on part of the acreage of Cypremort, but it is believed that most of it resulted from dusting with cryolite.

Oaklawn Plantation.—On Oaklawn Plantation 54 acres were dusted with undiluted synthetic cryolite at the rate of 8.1 pounds per acre per application, and 9.6 acres were dusted with a natural cryolite-pyrophyllite mixture (60:40) at the rate of 11.5 pounds per acre per application. Four applications were made at about weekly intervals beginning May 5, 1942, with a three-row dusting machine equipped with two nozzles per row. In midsummer 90 percent control was apparent in the area dusted with synthetic cryolite and 70 percent control in the area dusted with natural cryolite-pyrophyllite. Results of harvesttime examinations are given in table 4.

Table 4

Percentage of sugarcane joints bored in dusting experiment on Oaklawn Plantation, harvesttime examination, 1942.

Dusted Area: Location	Percent joints bored	Check Area: Location	Percent joints bored
Co. 281 tier 1	16.6	Co. 281 east of mill	41.5
Co. 281 tier 2	28.8		
C. P. 29/116 tier 3	57.0	C. P. 29/116 tier 3	63.7
C. P. 29/116 tier 3 (natural cryolite-pyrophyllite mixture)	50.5		
C. P. 29/116 front	38.0	C. P. 29/116 front	51.9
Average	38.2	Average	52.4

It may be noted that a control of only 27 percent was apparent at harvest-time. The area selected for dusting usually has been the most heavily infested on the plantation and was of insufficient size to prevent it from becoming reinfested by moth flying into it from adjacent undusted fields. This area fronted

on Bayou Teche, tier 3 of the dusted area being adjacent to undusted cane and thus acting as a buffer for the remainder of the dusted area. Exclusive of this buffer tier, the percentage of joints bored in the dusted area averaged 27.8, which is about half the infestation found in the undusted check areas.

Little Texas Plantation.—On Little Texas Plantation a total of 56 acres of summer-planted cane of several varieties were dusted four times at weekly intervals beginning April 27, 1942, at the rate of between 8 and 9 pounds of undiluted synthetic cryolite per acre per application. The dust was applied with a three-row power dusting machine drawn by a single mule. There were two nozzles per row. This cane was unusually large and unusually heavily infested. Borer stages present per acre about a month after the last dusting and percentages of joints found bored upon examination at harvest-time are given in table 5.

TABLE 5
Results of cryolite dusting experiment on Little Texas Plantation, 1942.

Field	Borer stages per acre in June	Percent joints bored at harvesttime
Dusted:		
Cut 6 C. P. 28/19	652	27.7
Cut 7 C. P. 29/320	144	15.7
Cut 8 C. P. 28/19	211	18.2
Cut 2 C. P. 29/116	364	29.5
C. P. 28/19 and C. P. 29/116 beyond factory		15.4
Average	343	21.3
Non-dusted:		
Cut 5 C. P. 28/19	1,016	29.6

When the two most comparable cuts of cane are compared, only 36 per cent control was apparent shortly after dusting. The undusted cut was located between two dusted cuts and undoubtedly received some cryolite which drifted from the dusted cuts on each side. It was apparent, however, that the percentage of control was not so high as has been obtained in other experiments. This poorer control undoubtedly was due to the unusually heavy borer infestation and the unusually large cane. The dusting, nevertheless, was apparently of much value in lowering losses due to the borer on this plantation by decreasing the number of borers in the heavily infested summer-planted cane from which a greater infestation would otherwise have spread to other areas. It may be noted from table 5 that the percentage of joints found bored at the harvest-time examination was only a little higher in the undusted check cut than in the dusted area. It is surprising to find even this difference, since the migration of borer moths from one cut to another during the season following first-generation dusting tends to reduce differences in infestation on dusted and undusted cuts.

Results of An Experiment in Planting Dusted Seed Cane

In a replicated experiment on the control of second-generation borers in cane of the variety C. P. 29/103 on Oaklawn Plantation in 1941, the average percentage of bored joints observed in cryolite-dusted plots was 13.2, in the undusted plots 56.2, and in the sulfur-dusted plots 77.2 percent. Cane from these plots was planted in a replicated experiment in the fall of 1941. It required about half as large an area of cryolite-dusted cane to supply seed cane for a given acreage as it did of the undusted or sulfur-dusted cane. The plant cane from this experiment was harvested December 11, 1942, and a 20-stalk sucrose sample was taken from each plot. These samples were analyzed by L. G. Davidson, Associate Chemist of the Bureau of Plant Industry, Soils, and Agricultural Engineering of the United States Department of Agriculture. Harvesting records are given in table 6.

TABLE 6
Yields of cane from plots planted with seed cane containing varying degrees of borer injury. Oaklawn Plantation, La., 1942.

Treatment of seed cane	Plot	Percent sucrose	Pounds of cane	Estimated Yield per acre	
				Tons of cane	Pounds of sugar
Dusted with cryolite	A1	15.12	2,180	17.6	3,819
	A2	14.95	1,820	14.7	3,131
	A3	15.62	2,410	19.4	4,346
	Average	15.23	2,137	17.2	3,765
Dusted with sulfur	B1	13.64	1,450	11.7	2,246
	B2	13.78	1,380	11.1	2,142
	B3	15.46	1,880	15.2	3,390
	Average	14.29	1,570	12.7	2,593
Not dusted	C1	13.60	1,790	14.4	2,765
	C2	15.03	2,130	17.2	3,681
	C3	14.31	1,930	15.6	3,167
	Average	14.31	1,950	15.7	3,204

In this experiment the planting of seed cane containing only a few borers because it had been dusted with synthetic cryolite resulted in an increase of 561 pounds of sugar per acre over the planting of undusted seed cane. Although in general such a high return as this may not always be realized from the planting of seed cane comparatively free from borer injury, the use of synthetic cryolite dust to reduce borer infestation in cane to be used for seed should be one of the ways in which this method of borer control can be applied with profit.

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1944 Cultivating Wages for Sugarcane Work in Louisiana

UNITED STATES DEPARTMENT OF AGRICULTURE

WAR FOOD ADMINISTRATION

Washington, March 11, 1944.

The War Food Administration today announced minimum wages to be paid laborers in Louisiana for the production and cultivation of sugarcane during 1944 by producers who apply for payments under the Sugar Act of 1937. The basic rate for adult male workers represents an increase of approximately 17 percent over the wage established for the same work in May 1943.

The Sugar Act requires, among other conditions of payment to growers, that all persons employed on a farm in the production, cultivation, or harvesting of sugarcane be paid in full by growers at rates not less than those determined to be fair and reasonable, after public hearing and investigation.

The determination also provides, as in former years, that the producer must furnish to the laborer without charge the accessories customarily supplied for him, such as a habitable house, garden plot with facilities for cultivation, pasturage for livestock, and medical attention.

The wage determination follows:

Title 7—Agriculture

CHAPTER VIII

WAR FOOD ADMINISTRATION

Part 802—*Sugar Determinations*

Determination of fair and reasonable wage rates for persons employed in the production and cultivation of sugarcane in Louisiana during the calendar year 1944.

Pursuant to Section 301(b) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Section 802.24n *Fair and reasonable wage rates for persons employed in the production and cultivation of sugarcane in Louisiana during the calendar year* 1944.

The requirements of section 301(b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the production and cultivation of sugarcane in Louisiana during the period from January 1, 1944 to December 31, 1944 if all persons employed on the farm during that period in the production and cultivation of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates not less than the following:

(a) On a time basis:

(1)	For all work except as specified under (2), (3) and (4) below per 9-hour day:	
	Adult males	$2.05
	Adult females	1.70
(2)	Tractor drivers, per 9-hour day	2.55
(3)	Teamsters, per 9-hour day	2.05
(4)	Children between 14 and 16 years, per 8-hour day	1.55

For a working day longer or shorter than 9 hours for adult workers, (or 8 hours for children between

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Marcel J. Voorhies, Editor

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.
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In This Issue

1944 Cultivating Wages for Sugarcane Work in Louisiana ..... Cover
Final Production Report of the 1943-44 Louisiana Sugar Crop 90
1944 Sugar Allocation 90
Farmer Experience With the Production of Sorgo for Industrial Alcohol in 1942 91
Increase in Price of Country Cane Syrup Denied 94
Sugar Rations for Consumers 95
E. W. Deming Expires in Cuba 95

14 and 16 years) the rate shall be the hourly equivalent of the per day rate. Maximum employment per day for children 14 to 16 years is 8 hours.

(b) On a piece rate basis:

For all classes of work performed on a piece rate basis the earnings per hour or per day shall be not less than the applicable rates per hour or per day specified under (a) above.

(c) General provisions:

(1) If the producer and the laborer agree upon a wage rate for any class of work higher than the prescribed herein, payment in full of the amount agreed upon must be made to qualify the producer for payment.

(2) The producer shall furnish to the laborer, without charge, the customary perquisites, such as a habitable house, a suitable garden plot with facilities for its cultivation, pasturage for livestock, medical attention and similar incidentals.

(3) The producer shall not, through any subterfuge or device whatsoever reduce the wage rates to laborers below those determined above.

(Sec. 301, 50 Stat. 909; 7 U. S. C. 1940 ed. 1131; 8 F. R. 3807; 8 F. R. 5423.)

Done at Washington, D. C., this 10th day of March, 1944.

WAR FOOD ADMINISTRATION.

FINAL PRODUCTION REPORT OF THE 1943-44 LOUISIANA SUGAR CROP*

Tons of Sugar Cane Ground 5,546,129

PRODUCT—	Tons Raw Value
Refined Sugar	60,663.0
Pl. Granulated	12,831.4
Crystals	4,570.9
Turbinados	34,261.9
Raws	316,719.4
Sugar in Magma Est.	2,923.5
Total Sugar Made and Estimated	431,970.1
First Molasses	5,936,230 Gallons
Second Molasses	4,754,073 Gallons
Syrup	4,458,137 Gallons
Blackstrap Made & Est. (80 Brix)	30,887,281 Gallons
Sugar (Raw Value) estimated in Commercial Molasses	14,171 Tons

*In the March 1st issue of the Sugar Bulletin we reported the preliminary estimates of the 1943-44 Louisiana Sugar Production.

Official Release

1944 Sugar Allocation

Civilian supplies of sugar will be lower in 1944 than in 1943 due to the use of sugarcane molasses for industrial alcohol, to the increased needs of our armed forces and allies, and to wartime shipping conditions, the War Food Administration has announced. The total allocation of sugar for all civilian uses in 1944 is 5,074,906 short tons, raw basis—a reduction of about 6% below the 5,400,000 tons consumed last year.

The tremendous demand for industrial alcohol, particularly for the manufacture of synthetic rubber and other products vitally needed in the war effort, is almost 50 percent above that of 1943 and 180 percent greater than in 1942. This will make it necessary to employ a quantity of 1944 Cuban crop sugarcane equivalent to 800,000 tons of sugar for the manufacture of invert molasses for the alcohol program, and to set aside as a reserve an additional 200,000 tons of Cuban raw sugar for the same purpose.

In 1943 grains furnished the bulk of the raw material needed to make alcohol. However, the expanded alcohol program, coupled with the need for

conserving grains for food and feed, requires the production of invert or high-test molasses from which no sugar is extracted and which therefore yields much more alcohol than does blackstrap molasses, a by-product in the making of sugar. Moreover, the supply of blackstrap is sufficient to meet only a relatively small portion of the increased production of alcohol needed for war purposes.

The sugar allocations are firm for the first and second quarters of 1944 but are subject to adjustment for the succeeding quarters. For the January-June period, civilians have been allotted 2,351,462 tons.

The January-March period normally is the low sugar consumption period of the year. The demands of manufacturers of processed and canned foods, as well as of home canners, increase substantially during the spring months of April, May and June, and reach their peak in the July 1-September 30 period. The use of sugar declines sharply in the last three months of the year.

The total quantity of sugar allocated for 1944 is 6,529,098 tons. Most of the difference of 1,454,192 tons between the grand total and the civilian share of 5,074,906 tons has been allocated to our armed forces and allies, while 200,000 tons are reserved for the alcohol program (in addition to the 800,000 tons in the form of invert molasses).

The sugar allocated for non-civilian uses during the first half of 1944 included 350,938 tons for direct use as sugar and 222,642 tons for indirect uses, such as in processed foods. Included in the sugar for direct use are 269,378 tons for the armed forces and war services and 79,618 tons for our allies and other friendly nations, the liberated areas, our territories, and the Red Cross.

The grand total of 6,529,098 tons is made up of a carryover of approximately 1,800,000 tons in continental United States on January 1, 1944, an anticipated mainland production of 1,775,000 tons, and 4,561,000 tons at the beginning of 1945. Such a January 1 operating stock on the mainland would be the smallest in more than a decade. More than half a million tons of sugar in offshore areas has been excluded from the total of expected imports to the United States, because this sugar may go direct from the producing areas to Russia, French North Africa and French West Africa.

In view of the domination by the Nazis of most of the world's production of beet sugar and by the Japanese of the cane sugar producing areas of the Far East, the sugar import requirements of the United Kingdom, Canada, and Russia must largely be met by Cuba, Dominican Republic, Haiti and other islands in the Caribbean area.

Sources of Our Sugar

Normally, approximately 30 per cent of the sugar consumed in the continental United States is produced on the mainland, of which roughly three-quarters comes from the sugar beet-growing states in the Midwest and West and the remainder from the mainland cane sugar area of Louisiana and Florida. Beet sugar production declined in 1943 but production in the mainland cane area, on the other hand, increased somewhat as a result of a larger crop in Louisiana.

The remainder of our sugar requirements in normal times is met almost entirely by Puerto Rico, Hawaii, Cuba and the Commonwealth of the Philippines. The loss of the Philippines in 1942 and the decline in beet sugar production in 1943 have increased greatly dependence on Cuba and other offshore areas. The 1942, 1943 and 1944 Cuban crops have all been purchased virtually in their entirety by the United States government. The Island of Cuba this year is expected to produce approximately 4,000,000 tons of sugar, of which all but 200,000 tons have been bought by the United States government. As already indicated, another 800,000 tons of sugar would be produced in Cuba in 1944 but for the diversion of sugarcane to the production of high-test molasses for the industrial alcohol program.

Production in Puerto Rico and Hawaii, despite the many handicaps experienced by growers in these domestic areas, has remained near prewar levels. However, the 1944 crops in these areas are expected to decline about 15 percent from the high level of recent years, largely because of a shortage of fertilizer or mechanical equipment. These islands normally contribute about 26 per cent of our sugar requirements, while small quantities of sugar are also imported from some foreign countries other than Cuba.

Farmer Experience with the Production of Sorgo for Industrial Alcohol in 1942

By J. N. Efferson

On February 11, 1942, the Secretary of Agriculture requested the cooperation of Louisiana sugar cane growers and processors in connection with a plan to grow 10,000 acres of sorgo and convert the crop into syrup for use in producing industrial alcohol. The final agreement, completed in March, 1942, provided that the Commodity Credit Corporation would undertake to purchase from the cooperating sugar mills the molasses produced from a ton of sugar for $5.50. This $5.50 was allocated as follows: $4.00 per ton of sorgo to be paid to the producer at the hoist nearest to the farm; $0.50 per ton on an average was allocated for hoisting and transportation of the sorgo from the farm to the mill; and $1.00 per ton was allocated to the processor for processing the sorgo into molasses.

The Youngsville Sugar Company, Inc., Youngsville, La., the Iberia Sugar Cooperative, Inc., New Iberia, La., and the Columbia Factory at Franklin, La., were the Louisiana sugar processing plants undertaking this program. Approximately 7,200 acres of sorgo were planted in the farming areas surrounding these three plants. The processing plants arranged contracts with the individual producers which provided for delivery of the sorgo by the grower at a price of $4.00 per ton at the farm.

In December, 1942, data showing the costs and returns of the sorgo enterprise were obtained in a survey conducted by the Louisiana Agricultural Experiment Station. Information concerning the expenses, receipts, farm practices, and problems connected with the sorgo crop in 1943 were obtained from 67 farmers who produced 4597 tons of sorgo from 693 planted acres. Records were obtained in each of the three areas of production. The farms studied had an average of 10 acres per farm planted to sorgo and made an average yield of 6.6 tons per acre. Most of the farmers furnishing data were small family-sized operators growing sugar cane for sale to sugar mills as their principal farm enterprise.

Average Costs and Returns

The average cost and returns on the sorgo enterterprise for the 67 farms surveyed in the Louisiana sugar cane area in 1942 are shown in Table 1. Total

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costs amounted to $3.41 per ton, which was made up of $1.39 for man labor, $0.63 for land rent, $0.47 for tractor work, $0.31 for the use of workstock, $0.29 for fertilizer, $0.22 for depreciation and repairs on the farm equipment used on the enterprise, and $0.10 for seed. With a gross return of $4.00 per ton of sorgo produced, these growers made an average profit of about $4.00 per acre, $0.50 per ton, of $0.35 for each hour of labor used on the enterprise.

TABLE 1

Costs and Returns on the Sorghum Enterprise in the Louisiana Sugar Cane Area in 1942[1]

	Unit	Amount per acre	Cost or Return per acre	Cost or Return per ton
Costs:				
Seed	pounds	7	$ .69	$ .10
Man Labor	hours	37	9.20	1.39
Horsework	hours	16	2.08	.31
Tractor use	hours	5	3.08	.47
Fertilizer	pounds	100	1.90	.29
Equipment use	------	--	1.48	.22
Land costs	acre	1	4.18	.63
Total Costs	------	--	22.61	3.41
Total Returns	tons	6.6	26.54	4.00
Net Profit	------	--	3.93	.59

[1] Summarized from data collected from 67 farmers producing 4597 tons of Sorghum for industrial alcohol from 693 acres of sorghum.

Factors Affecting Costs

The most important factor affecting the costs and returns on the enterprise was the yield of sorgo. Twenty of the 67 farmers interviewed made yields of more than 8 tons per acre and produced the crop at a cost of about $3.00 per ton. Twenty-one of the farms studied had average yields of less than 5 tons per acre and average costs of more than $6.00 per ton. In general, the producers making yields of 6 tons or more per acre broke even and those with higher yields, made a small profit on the enterprise.

Two different varieties of sorgo were planted; Kansas Orange and Sumac. In most cases the growers planting Kansas Orange seed obtained higher yields than those planting the Sumac variety, although some relatively high yields of Sumac were reported. Of more importance, perhaps, was the quality of the seed. One large shipment of seed proved to be of very poor quality and growers obtaining seed from this supply had lower yields than others using seed from another shipment, even when planting the same variety. Other factors affecting yields were the use of nitrogen fertilizer and the condition of the land on which the sorgo crop was planted. Farmers using 100 to 150 pounds of nitrate of soda made higher yields and had lower costs per ton than those who used no fertilizer. Farmers planting the sorgo crop on land that had been planted to corn and soybeans the previous year made higher yields than did those planting the crop on land that had been in stubble cane.

Another factor influencing the yield was the rate of seeding per acre and the practice of thinning to obtain a properly spaced stand and even maturity. It was first recommended that farmers purchase seed sufficient to plant 10 pounds to the acre. Most growers quickly observed that, in view of the standard 6-foot row, planting at this rate was excessive and the majority planted at the rate of 7 to 8 pounds to the acre. Even at this reduced rate, the general opinion of the growers interviewed was that they would have made a larger tonnage of marketable sorgo if they had planted only 4 or 5 pounds per acre. As the crop matured, the relatively thick stands were observed and thinning was recommended but most of the farmers who tried to thin their stands

waited until suckering had about ceased and found that a secondary development of suckers followed the thinning operation, resulting in highly uneven stages of maturity when the crop was harvested. The general opinion of the growers interviewed was that higher yields could be obtained by lower rates of seeding and by thinning heavy stands soon after the crop comes up instead of waiting until it is a foot or more in height.

Labor Requirements for the Sorgo Crop

The sorgo crop required about one-fifth the amount of man labor usually required to grow and harvest sugar cane. Labor used on the sorgo crop on the farms studied in 1942 averaged 37 hours per acre or about 6 hours per ton as compared with the usual requirement of about 200 hours per acre or 11 hours per ton for sugar cane (Table 2). The sorgo crop was planted and harvested within a much shorter period of time than is required for sugar cane; it was planted in March and harvested in late July and early August.

TABLE 2
Labor Requirements for the Sorghum Enterprise on 67 Farms in the Louisiana Sugar Cane Area in 1942

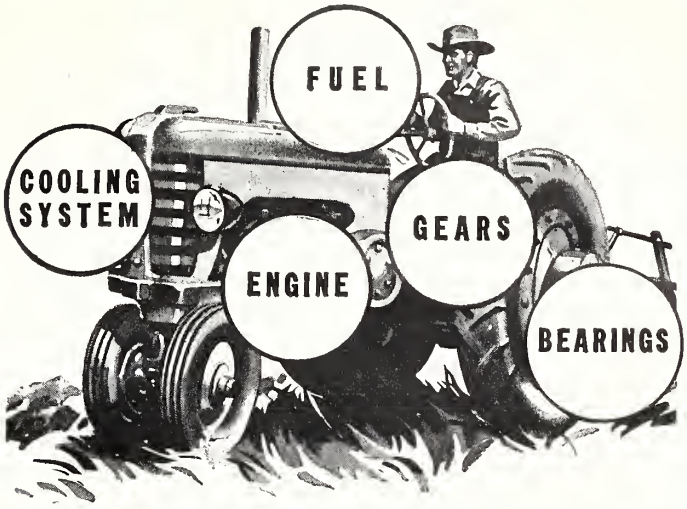
Operation	Usual Period of Performance	Hours of Man Labor Required per acre	Hours of Man Labor Required per ton
Breaking Land	March 1-15	1.9	.3
Preparing Seedbed	March 15-30	1.4	.2
Planting	April 1-15	1.5	.2
Cultivating	May 1-30	5.1	.8
Fertilizing	May 1-15	1.4	.2
Harvesting	July 20-August 15	25.7	3.9
Total		37.0	5.6

Is There a Place for the Sorgo Enterprise in the Cane Belt

No conclusions can be drawn as to the long-time possibilities of the sorgo enterprise on farms in the sugar cane area of Louisiana from the results of one year of trial and error. The 1942 experience of farmers and processors, however, does give an indication of some of the possibilities and problems involved.

The survey of farmers producing the crop in 1942 indicates that at a price of $4.00 per ton at the farm, some of the producers made a reasonable profit. The facts also indicate that the further development and use of improved varieties adapted to the climatic and soil conditions of the area, the use of higher-quality seed, and the application of improved cultural practices, such as proper seeding rates and thinning procedures, would result in higher yields per acre and lower costs per ton. The timing of sorgo production operations, including harvesting, fits in well with the labor distribution pattern of the other crops commonly grown on sugar cane farms, and thus could possibly become an additional source of income on many farms in the area without increasing cash labor costs to a great extent. Also, the grinding season, coming at least two months before the start of the grinding season for sugar cane, would provide the cane mill operators with an additional use of otherwise idle machinery and thus cut down overhead costs if the same machinery can be adapted to handle the sorgo crop as is used to grind sugar cane.

On the other hand, on the farms already making use of their labor and other resources, the addition of the sorgo enterprise would make it necessary to reduce the sugar cane or corn acreage. The United States Department of Agriculture dropped the Louisiana sorgo for molasses program after the 1942 experiment. The principal reason given was that "competition in land use limits the potential use of sorgo



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Official Release

(Increase in Price of Country Cane Syrup Denied)

A request for an increase in maximum prices for blenders of country cane syrup was denied February 24 by the Office of Price Administration.

Blenders who made the request declared that higher ceiling prices were needed because of an increase in the cost of pure cane syrup, one of the ingredients used in the blending of country cane syrup. OPA raised producers' maximum prices for pure cane syrup in December, 1943.

Denial of the requested increase followed an OPA accounting study of the blending industry which showed that present ceiling prices are generally sufficient to cover costs of the blended syrup and to permit a profit to the blenders equal to that which they made during a recent representative peace-time period.

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to a relatively subordinate position as a source of alcohol—since the greater part of any expansion in sorgo acreage would necessarily have to be made at the expense of corn—".

Also, the crop would have to prove to be profitable to the processors as well as to the growers before it could have a place in the Louisiana sugar cane area. The processors handling the sorgo crop in 1942 reported that, in general, they made little or no profit on their sorgo operation in 1942. One of the important processing problems was the disposal of the sorgo bagasse. It appeared that, because of uneven maturity and excess leaves on the sorgo stalks, the sorgo bagasse would not burn readily. One plant used dehydrating equipment and manufactured a stock feed with part of the bagasse while another made silage from some of it but each of the mills reported that the excessive costs of bagasse disposal more than absorbed the margin of profit they realized over the other operating costs.

In addition, in normal times it is to be assumed that the production of sorgo will not be underwritten by a governmental agency and that the enterprise will have to meet both domestic and foreign competition. In 1942, the Commodity Credit Corporation paid $5.50 per ton for sorgo which produced 16 to 18 gallons of marketable syrup per ton. This made the cost of syrup at the mill about 30 to 35 cents per gallon. In the past, commercial sugar cane molasses for use in making industrial alcohol or for use in stock feeds has sold for much less than 30 cents per gallon, thus both growers and processors in Louisiana must develop methods of increasing yields and reducing costs before the enterprise can be expected to become an important part of the sugar cane area.

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Official Release

(Sugar Rations for Consumers)

Sugar rations for consumers, both for direct household use and for home canning, and allotments to the trade for the next quarterly period, starting April 1, were announced on February 27th by the Office of Price Administration.

Allotments are based on the April through June civilian allocations just announced by the War Food Administration, OPA said, and have necessitated several changes in the rationing program during the coming quarter.

Rations announced are:

1. Industrial allotments. For the quarterly period from January 1 through June 30, 1944, industrial users will receive 70 per cent of their 1941 sugar base—compared with the 30 percent they have been getting since the increases allowed last August.

Excluded from this cut are bakers and manufacturers of cereal products, registered in classes 1, 2 and 3, who will continue to get 80 percent of their base use, and manufacturers of drugs and medicines who will continue to get 100 percent of the amount they used in comparable months of 1941.

Applications for these allotments will be made between March 15 and April 15 as usual.

2. The consumer ration. Sugar stamp 30 in War Ration Book Four, previously announced to expire on March 31, will continue to be good for an indefinite period. Stamp 31, the next sugar stamp, will become valid as scheduled on April 1 for five pounds of sugar. No expiration date is announced for this stamp.

OPA cannot say definitely at this time whether any change will be necessary in the consumer ration in the next few months. If the removal of expiration dates from consumer stamps postpones buying sufficiently, and if adequate shipping can be provided, it is expected that the current consumer ration will remain unchanged.

3. Sugar for home canning. Although no details of the sugar allowance for home canning are announced at this time, it is not expected that the WFA allocation will necessitate a reduction in last year's per person allowance of sugar for home canning.

In making these announcements, OPA explained details of all programs are now being worked out, and will be completed and announced shortly.

E. W. DEMING EXPIRES IN CUBA

News of the death of E. W. Deming, who was widely known in Louisiana sugar circles, was received here recently. He was injured fatally when struck by an automobile while crossing a street in Marianao, Cuba, on February 16 and was buried there in Colon cemetery.

Mr. Deming came to Louisiana from Kansas in the early 1890s. He specialized in juice heating and clarification and the Deming juice heaters were widely adopted by Louisiana sugar producers. Some are still in use.

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Vol. 22 NEW ORLEANS, LA., APRIL 1, 1944 No. 13

Farming Practices for 1944 Sugarcane Crop in Mainland Cane Sugar Area

Official Release

Determination of farming practices to be carried out in connection with the production of the 1944 crop of sugarcane in the mainland cane sugar area.

Pursuant to the provisions of section 301 (e) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

§802.23f. Farming practices in connection with the production of the 1944 crop of sugarcane in the mainland cane sugar area —(a) Conservation requirements. The requirements of section 301 (e) of the Sugar Act of 1937, as amended, shall be deemed to have been fulfilled with respect to any sugarcane farm in the mainland cane sugar area if there is carried out in 1944, on land on the farm which is adapted to the production of sugarcane for sugar, an acreage of approved conservation practices equal to not less than 15 percent of the acreage of sugarcane for sugar growing on the farm for harvest in 1944.

(b) Approved practices. 1) Each acre of the following shall be counted as one acre of conservation practices:

(i) Seeding winter legumes in the fall of 1944.

(ii) Turning under a satisfactory growth of summer legumes grown alone.

(iii) Turning under in 1944 a satisfactory growth of winter legumes seeded in the fall of 1943.

(2) Each two acres of the following shall be counted as one acre of conservation practices:

(i) Turning under a good stand and good growth of summer legumes (excluding peanuts, lespedeza, and summer legumes used as truck crops) interplanted or grown in combination with row crops, such as corn: Provided, The summer legumes occupy at least one-third of the land.

(3) Each of the following practices in the amounts specified shall be counted as one acre of conservation practices:

(i) Application of 48 pounds of available phosphoric acid P_2O_5 to, or in connection with, a full seeding of winter legumes.

(ii) Application of 500 pounds of basic slag (rock phosphate or Colloidal Phosphate in Florida) to, or in connection with, a full seeding of winter legumes.

(iii) Removing 25 cubic yards of each in the construction, enlargement, or cleaning out of lateral ditches and lead canals. (Applicable in Louisiana only.)

(4) Each one and one-half acres of land the top soil of which is combustible (determined as such by the State AAA Committee) and from which no crop classified as soil-depleting in ACP-1941, 1941 Agricultural Conservation Program Bulletin, as amended, is harvested in 1944 and on which adequate facilities (ditches, pumps, and necessary equipment) have been maintained (whether constructed in 1944 or earlier) for flooding the land during the 1944 fire hazard season as a protection against the destruction of such top soil by fire and on which there are carried out the practices specified in paragraphs B, C, D, and E of Amendment 3 to Southern Region Bulletin 101, issued June 11, 1937, for protecting the soil against fire, assuring adequate drainage and preventing soil oxidation and subsidence, shall be counted as one acre of conservation practices: Provided, however, That there shall be carried out on such land on the farm such other practices as are recommended for

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In This Issue

Farming Practices for 1944 Sugarcane Crop in Mainland Cane Sugar Area.....Cover
Statement on Sugar..... 98
Contract Committee Meets..... 99
Wage Requirements for 1944 Crop of Sugar Beets 100
Farming Practices in Puerto Rico..... 100
Increase in Price of Blended Syrup Denied.... 101
Sugar Statistics for January 1944..... 101
Proportionate Shares for the Virgin Islands for the 1944 Crop..... 102
Fair and Reasonable Wage Rates for Hawaii During 1944..... 103
Determination of Proportionate Shares for Sugarcane Farms in the Territory of Hawaii for the 1944 Crop..... 103

the farm by the County AAA Committee, and approved by the State AAA Committee, for protecting the soil against fire, assuring adequate drainage, preventing soil oxidation and subsidence, and otherwise preserving and improving the fertility of the soil and preventing soil erosion, such practices to be consistent with reasonable standards of the farming community in which the land is located. (Applicable in Florida only.)

(c) Standards of performance. The conservation practices shall be carried out in accordance with farming methods commonly used in the community in which the farm is located and in accordance with specifications approved by the Director of the Southern Division of the Agricultural Adjustment Agency.

(Sec. 301, 50 Stat. 910; 7 U. S. C., 1940 ed. 1131; E. O. 9322, 8 F. R. 3807; E. O. 9334, 8 F. R. 5423.)

Issued at Washington, D. C., this 13th day of March 1944.

WILSON COWEN,
Assistant War Food Administrator.

Statement on Sugar

United States Department of Agriculture

The War Food Administration said March 23, 1944, in response to numerous queries that there has been no improvement in the sugar supply situation since the 1944 sugar allocations were announced on February 26. At that time it was stated that the total quantity of sugar allocated for civilians and U. S. armed forces, as well as for part of the requirements of our allies and the industrial alcohol program, for the current year was 6,529,098 short tons, raw value. The share for civilians in 1944 is approximately 5,074,906 tons or 6 per cent below the 5,400,000 tons of sugar consumed by them last year.

At that time these figures were announced it was stated that "the grand total of 6,529,098 tons is made up of a carryover of approximately 1,800,000 tons in continental United States on January 1, 1944, an anticipated mainland production of 1,775,000 tons, and 4,561,000 tons of expected receipts from insular areas, less a carryover of 1,607,000 tons at the beginning of 1945. Such a January 1 operating stock on the mainland would be the smallest in more than a decade."

Numerous dailies on March 22 carried stories based on testimony given by the Chief of the Sugar Branch, Office of Distribution, WFA, before the Subcommittee of the House Appropriations Committee on February 24. Following an off-the-record discussion with respect to war shipping of sugar, a figure of 8,600,000 tons was mentioned in the testimony just published as representing the total estimated 1944 available supply, but it apparently was not made clear that this figure included necessary year-end working stocks as well as a substantial quantity of Caribbean sugar which will be made available to our allies in the offshore areas.

The shortage of labor and equipment, as well as shipping, continues to limit the supply of sugar available for civilian, military and Lend-Lease needs. The War Food Administration has embarked on a number of production assistance programs in an effort to stimulate the production of sugar and is using and will continue to use its efforts to secure adequate supplies of labor and equipment for the sugar producing industry.

NOTICE

The American Sugar Cane League is seriously considering creating a position, the principal duties of which would be as follows:

1. To keep increase cooperators informed as to recommendations of experiment station workers in regard to merits of individual varieties available for increase.
2. To supervise movement of seed cane from experiment stations to Primary Increase Stations and from Primary Increase Stations to Secondary Increase Stations, and to take necessary steps to guard against the incidental spread of disease.
3. To supervise, as far as physically possible, the planting of all increase plantings and to make an accurate map in each case.
4. To inspect all increase plantings at relatively frequent intervals during the growing season, check for diseases or possible mixtures, and keep a record of important observations regarding field performance of promising varieties.
5. To keep an acreage inventory of all varieties in all stages of increases.
6. To take active charge of the distribution of available seed of a variety at time of release under the provision of the Three-Way Agreement and under the supervision of the Manager of the American Sugar Cane League.
7. To keep informed of recommendations for the control of diseases and insects among commercial varieties on plantations and to foster the use of procedures recommended by the staffs of the two experiment stations for combatting diseases and pests, in cooperation with county agents, technical plantation employees, and growers.

Interested persons should make written application (stating salary expected) to the American Sugar Cane League, 414 Whitney Building, New Orleans 12, Louisiana, within the next fifteen to eighteen days.

Contract Committee Meets

A meeting of the Contact Committee of the American Sugar Cane League was held at Baton Rouge, Louisiana, on March 8, 1944. Those present were:

Contact Committee

Stephen C. Munson	George Billeaud
Bronier Thibaut	Horace Nelson
H. K. Bubenzer	A. A. Thibaut
Emile A. Maier	M. J. Kahao
Elliott Jones	Paul G. Moresi

Houma Station

George Arceneaux	E. K. Bynum
E. M. Summers	E. V. Abbott
	J. W. Ingram

Experiment Station

W. G. Taggart	C. W. Edgerton
C. B. Gouaux	M. B. Sturgis
E. C. Simon	P. J. Mills
P. H. Dunckelman	J. N. Efferson
A. L. Dugas	F. Carvajal
I. L. Forbes	B. M. Gile

Visitors

J. J. Shaffer	J. G. Richard
Marcel J. Voorhies	E. P. Munson
R. J. LeBlanc	E. W. McNeil
	F. Sanchez

The meeting was called to order by Mr. Stephen C. Munson, Chairman.

A report on sugarcane fertilizer tests for the seasons 1942 and 1943 conducted by C. B. Gouaux, B. M. Surgis and R. K. Walker was given.

Dr. Sturgis informed the Committee that he was to attend a meeting in Shreveport on March 23 as a representative of the Experiment Station at which he would be called upon to make requests for fertilizer grades for next year for the cane belt. He recommended to the Committee that 12-8-12 be requested for next year instead of 12-8-0, which has been the established grade for the previous six or seven years, since 12-8-12 would in his opinion more nearly meet the needs of the majority of growers west of the Atchafalaya. After thorough discussion, the Committee asked that Dr. Sturgis and Mr. Davidson of the Houma Station meet and correlate their results, and together decide what recommendations Dr. Sturgis should make at the fertilizer meeting.

Dr. C. W. Edgerton gave a report on the cooperative tests with the hot water treatment of sugarcane, in which he reported that tests over a period of three years showed satisfactory increases in yield as a result of the hot water treatment.

Dr. J. N. Efferson presented two reports prepared by Dr. R. A. Ballinger on costs and return of operating large sugar cane farms in Louisiana for the crop year 1942, and on costs and returns of operating sugar mills in Louisiana for the crop year 1942.

Dr. Forbes showed the Committee cane of several varieties to demonstrate the effect of windrowing for seed on each. He pointed out that while Co. 290 had gone to pieces when windrowed, C. P. 33-310, 29-103, and 29-120 were almost perfect windrowing canes, and that C. P. 29-116 and C. P. 36-105 held up satisfactorily when windrowed.

Representatives of the Firestone Rubber Company presented a short moving picture entitled "Freedom Rides on Rubber" which showed every stage of the manufacture of synthetic rubber from alcohol. They advised the Committee that while there was an abundance of synthetic rubber being manufactured, there was not enough labor available to manufacture tires for civilian use in any quantity and that there was still a serious shortage of tires of all kinds.

The meeting was adjourned subject to call.

Official Release

Wage Requirements for 1944 Crop of Sugar Beets

UNITED STATES DEPARTMMENT OF AGRICULTURE

War Food Administration

Washington, March 17, 1944.

The War Food Administration has announced wage requirements to be met by producers of the 1944 sugar beet crop who apply for payments under the Sugar Act of 1937. The determination requires payment of whatever wage may be agreed upon for the 1944 crop but not less than the rates specified in the 1943 determination. A change in the qualifications for payment of the thinning rate for fields planted with segmented seed has been made in view of the more efficient planting methods now being used. The announcement of the wage requirements at this time will permit farmers to complete plans for meeting the 1944 production goals.

The Sugar Act of 1937 requires, among other conditions of payment to growers, that all persons employed on farms in the production of sugar beets be paid in full for such work at rates not less than those determined to be fair and reasonable, after public hearing and investigation. Public hearings were held during January in Washington, D. C., Detroit, Michigan, and Denver, Colorado.

The full determination follows:

TITLE 7 — AGRICULTURE, CHAPTER VIII, WAR FOOD ADMINISTRATION Part 802—Sugar Determinations

DETERMINATION OF FAIR AND REASONABLE WAGE RATES FOR PERSONS EMPLOYED IN THE PRODUCTION, CULTIVATION, OR HARVESTING OF THE 1944 CROP OF SUGAR BEETS.

Pursuant to the provisions of subsection (b) of Section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Section 802.14j. *Fair and reasonable wage rates for persons employed in the production, cultivation, or harvesting of the* 1944 *crop of sugar beets.* The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the production, cultivation, or harvesting of the 1944 crop of sugar beets if all persons employed on a farm, or part of a farm covered by a separate labor agreement, in the production, cultivation, or harvesting of the 1944 crop of sugar beets shall have been paid in full for all such work and shall have been paid wages at rates not less than the following:

(a) The wage rates agreed upon, but no less than the wage rates specified in paragraph (a) of the "Determination of Fair and Reasonable Wage Rates for Persons Employed in the Production, Cultivation, or Harvesting of the 1943 Crop of Sugar Beets", of April 7, 1943.

(b) The provisions of paragraph (b) of the aforementioned determination of April 7, 1943, shall apply to the 1944 crop, except that sub-paragraph (3) shall read as follows:

"(3) That in an instance where the planting of segmented seed reduces the amount of labor required in thinning as compared with whole seed the piece rate for blocking and thinning shall be the rate agreed upon between the laborer and the producer but not less than 75 per cent of the piece rate for blocking and thinning prescribed under paragraph (a) of this determination."

(c) For purposes of this determination, a farm, or part of a farm covered by a separate labor agreement, shall be deemed to be located in the wage district in which the factory where the beets are contracted to be delivered is located.

(Sec. 301, 50 Stat. 909; 7. U. S. C. 1940 ed. 1131; E. O. 9322, 8 F. R. 3407; E. O. 9334, 8 F. R. 5423.)

Issud this 16th day of March, 1944.

Ashley Sellers,
Assistant War Food Administrator.

Official Release

(Farming Practices in Puerto Rico)

Determination of Farming Practices to Be Carried Out in Connection with the Production of Sugarcane During the Crop Year 1944-45 in Puerto Rico, Pursuant to the Sugar Act of 1937, as Amended.

Pursuant to the provisions of section 301 (e) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Farming practice to be carried out in connection with the production of sugarcane during the crop year 1944-45. The requirements of section 301 (e) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to any farm in Puerto Rico if the farming practices specified under paragraph (a) below are carried out on the farm during the period January 1, 1944 to April 30, 1945, and if food crops for human consumpton are grown on the farm during the period February 1, 1944 to January 31, 1945, in accordance with the provisions of paragraph (b) below:

(a) *Requirements with respect to application of fertilizer*—(1) *Farms containing more than* 400 *acres of sugarcane.* For farms on which more than 400 acres of sugarcane are growing at any time during 1944:

(a) The application to land on which sugarcane is planted during 1944 of sufficient chemical fertilizer to provide an average quantity of plant food per acre fertilized equal to not less than 75 pounds.

(ii) The application to land on which a ratoon crop of sugarcane is started during 1944 of sufficient chemical fertilizer to provide an average of not less than 50 pounds per acre fertilized.

(2) *Farms containing more than* 100, *but not more than* 400, *acres of sugarcane.* For farms on which more than 100, but not more than 400, acres of sugarcane are growing at any time during 1944:

(i) The application to land on which sugarcane is planted during 1944 of chemical fertilizer in an amount averaging not less than 200 pounds per acre fertilized.

(ii) The application to land on which a ratoon crop of sugarcane is started during 1944 of chemical fertilizer in an amount averaging not less than 130 pounds per acre fertilized.

(3) *Farms containing* 100 *acres or less of sugarcane.* For farms on which not more than 100 acres of sugarcane are growing at any time during 1944:

(i) The application to land on which sugarcane is planted during 1944 of chemical fertilizer in an amount averaging not less than 125 pounds per acre fertilized.

(ii) The application to land on which a ratoon crop of sugar cane is started during 1944 of chemical fertilizer in an amount averaging not less than 80 pounds per acre fertilized.

(iii) In lieu of the provisions of subdivisions (i) and (ii) of this subparagraph the application during the 1944 harvest season to the land from which sugarcane is harvested of the tops and trash cut from such sugarcane.

(4) *Minimum acreage requirements for the application of fertilizer.* In every case in which the application of fertilizer is required as aforesaid, the number of acres on which fertilizer is to be applied prior to April 30, 1945, shall not be less than 100 percent of the number of acres on which sugarcane is planted during 1944, and not less than 80 percent of the number of acres on which a ratoon crop of sugarcane is started during 1944.

(5) *Standards of performance.* The foregoing practices shall be carried out on the farm in accordance with farming methods commonly used in the community in which the farm is located.

(6) *Definitions.* Wherever used in this section, chemical fertilizer and plant food are to be defined as follows: "Chemical fertilizer" means commercial chemical fertilizer of which not less than 15 percent of the gross weight consists of plant food. "Plant food" means the aggregate amount of nitrogen, available phospheric acid, and water soluble potash.

(b) *Requirements with respect to food crops.* (1) The land to be used for production of food crops shall be land suitable for the production of sugarcane.

(2) The food crops planted must be among the following: beans (any type), cowpeas, corn, rice, yams, potatoes (Irish and sweet), gandules (plant crop), tanier, apio, cassaba (yucca).

(3) The acreage of such food crops shall be equal to not less than 10 per cent of the land on the farm on which sugarcane is growing at June 30, 1944 (but in no event less than one-tenth of an acre).

(4) The land devoted to the crops in question shall be suitably prepared by plowing or disking, adequately seeded, and cultivated in a workmanlike manner to assure a good stand at the time of maturity.

(5) *Additional credit for the planting of leguminous food crops.* Each acre planted to the leguminous food crops specified in paragraph (b) (2) above, shall be equivalent to 1½ acres planted to the non-leguminous types of food crops specified therein.

Done at Washington, D. C., this 29th day of December 1943.

ASHLEY SELLERS,
Assistant War Food Administrator.

Official Release

Increase In Price of Blended Syrup Denied

A request for an increase in maximum prices for blenders of country cane syrup was denied today by the Office of Price Administration.

Blenders who made the request declared that higher selling prices were needed because of an increase in the cost of pure cane syrup, one of the ingredients used in the blending of country cane syrup. OPA raised producers' maximum prices for pure cane syrup in December, 1943.

Denial of the requested increased followed an OPA accounting study of the blending industry which showed that present ceiling prices are generally sufficient to cover costs of the blended syrup and to permit a profit to the blenders equal to that which they made during a recent representative peace-time period.

Sugar Statistics for January 1944

Distribution of sugar by the primary distributors in the United States during January, 1944, as compared with the corresponding period of 1943, was as follows:

	1944	1943
	(Short tons, raw value)	
Refiners' raw sugar (table 1)	743	919
Refiners' refined sugar (table 2)	393,862	279,625
Beet sugar processors table 2)	86,890	106,092
Importers' direct-consumption sugar (table 3)	25,591	26,554
Mainland cane mills' direct-consumption sugar (table 4)	32,266	10,941
Total	539,352	424,131
Deliveries for export*	40,360	55,356
Distribution for consumption in Continental United States	498,992	368,775

The distribution of sugar for local consumption in Puerto Rico during January, 1944, was 5,350 tons. (Table 5.) Data for the Territory of Hawaii are not yet available.

Stocks of sugar on hand January 31 were as follows:[2]

	1944	1943
	(Short tons, raw value)	
Refiners' raw	395,670	368,064
Refiners' refined	234,753	261,143
Beet sugar processors	777,596	1,268,129
Importers' direct-consumption sugar	51,758	72,294
Mainland cane factories	105,274	118,906
Total	1,565,051	2,088,536

*Department of Commerce data on actual exports not available for publication.

[2]Not including raws for processing held by importers other than refiners, nor raws held by refiners but not yet reported by them on Form SS-15A, which amounted to 25,400 short tons, commercial value, in 1944, and 9,760 short tons, commercial value, in 1943.

Sugar Statistical Reports

Vol. II, No. 1—January, 1944

TABLE 1

Raw Sugar: Refiners' stocks, receipts, meltings and deliveries for direct consumption for January, 1944 (short tons, raw value)

Source of supply	Stocks on Jan. 1,1944	Receipts	Meltings	Deliveries for direct consumption	Lost by fire	Stocks on Jan. 31,'44
Cuba	242,117[1]	154,096	205,352	332	.....	190,529[2]
Hawaii	80,408	18,103	60,889	92	.....	37,530
Puerto Rico	39,592[1]	64,037	50,779	31	.....	52,819
Philippines	167	0	0	0	.....	167
Continental cane	98,103	53,071	44,318	288	.....	106,568
Other countries	10,752	36,418	39,113	.....	.....	8,057
Miscellaneous (sweepings, etc.)	.....	4	4	.....	.....	.....
Total	471,139[1]	325,729	400,455	743	.....	395,670

Compiled from reports submitted by sugar refineries on Form SS-15A.

[1]Revised.

[2]Includes 58,221 tons in customs' custody.

TABLE 2

Stocks, production, and deliveries of cane and beet sugar by United States refiners and processors, January, 1944. (short tons, raw value)

	Refineries[1]	Domestic Beet Factories
Stocks of refined, Jan. 1, 1944	238,709[2]	838,497[2]
Production	389,906	25,989
Deliveries	393,862	86,890[3]
Stocks of refined, Jan. 31, 1944	234,753	777,596

Compiled from reports submitted on Form SS-16A and SS-11C by the sugar refineries and beet sugar factories.

[1]—The refineries' figures are converted to raw value by using the factor 1.068271 which is the ratio of meltings of raw sugar to refined sugar produced during the years 1942 and 1943.

[2]Revised.

[3]Larger than actual deliveries by a small amount representing losses in repossessing, etc.

TABLE 3

Stocks, receipts and deliveries of direct-consumption sugar from specified areas, January, 1944. (short tons, raw value)

Source of supply	Stock on Jan. 1, 1944	Receipts	Deliveries or usage	Stock on Jan.31,1944
Cuba	50,112[1]	15,208	19,792	45,528[2]
Hawaii	0	0	0	0
Puerto Rico	11,720	45	5,535	6,230
Other foreign areas	.....	264	264	0
Total	61,832[1]	15,517	25,591	51,758

Compiled from reports and information submitted by importers and distributors of direct-consumption sugar on Forms SS-15B and SS-3.

[1]Revised.

[2]Includes 7,032 tons in customs' custody.

TABLE 4

Mainland cane mills' stocks, production, and deliveries, January, 1944. (short tons, raw value)

Jan. 1, 1944	Production	Deliveries For direct Consumption	Deliveries For further processing	Stocks on Jan. 31,1944
°141,171	47,466	32,266	51,097	105,274

*Revised.

TABLE 5

Distribution of sugar for local consumption in Puerto Rico and the Territory of Hawaii, January, 1944 (short tons, raw value)

Puerto Rico	5,350
Hawaii	*

*Not yet available.

Entries of Sugar from Offshore Areas Through February 29, 1944

The quantity of sugar entered for consumption from all offshore areas during January-February amounted to 648,277 short tons, raw value. For the corresponding period last year the quantity entered totaled 619,622 tons. The figures are subject to change after final outturn weights and polarization data for all entries are available.

A total of 84,822 short tons, of sugar, raw value, was marketed by the mainland cane area and 86,890 tons by the continental beet area during January 1944 as compared with 31,513 tons and 106,092 tons, respectively, during the same period of 1943.

Area	Quantity entered through February 29 (short tons, 96° equivalent)
Hawaii	76,351
Cuba	392,237
Puerto Rico	127,270
Foreign countries other than Cuba	52,419
Total	648,277

DIRCT-CONSUMPTION SUGAR

Direct-consumption sugar is included in the foregoing quantities shown as entered through February 29.

Area	Quantity entered through February 29 Sugar Polarizing 99.8° and above	Sugar Polarizing less than 99.8°	Total
	(short tons, 96° equivalent)		
Cuba	28,014	2,552	30,566
Puerto Rico	45	0	45
Hawaii	0	0	0
Total	28,059	2,552	30,611

ENTRIES FROM FULL-DUTY COUNTRIES

Area	Quantity entered through February 29[1] (pounds)
Dominican Republic	68,770,547
Dutch East Indies	720,172
Haiti	32,853,505
Martinique	2,493,408
Total	104,837,632
Tons	52,419

[1]Excluding the first 20,000 pounds entered from each area. Under the quota provisions of the Sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, these deductions continue to be made in order to keep entry figures on basis comparable with those of previous years.

Official Release

Proportionate Shares for the Virgin Islands for the 1944 Crop.

Pursuant to the provisions of section 302 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Porportionate shares for sugarcane farms in the Virgin Islands for the 1944 *crop* (a) *Farm proportionate share.*—The proportionate share for each sugarcane farm in the Virgin Islands for the 1944 crop shall be the amount of sugar, raw value, commercially recoverable from sugarcane grown on the farm and marketed (or processed by the producer) for the extraction of sugar during the 1944 crop.

(b) *Tenant and sharecropper protection.* — The provisions of this determination are subject to the following conditions:

(1) That no change shall have been made in the leasing or cropping agreements for the purpose of, or which shall have the effect of, diverting to any producer any payments to which tenants or sharecroppers would be entitled if the 1942-43 leasing or cropping agreements were in effect.

(2) That there shall have been no interference by any producer with contracts entered into by tenants or sharecroppers for the sale of their sugarcane.

(c) *Designation of agent.*—The Chief, or the Acting Chief, of the Sugar Branch of the Food Distribution Administration, and the Officer in Charge of the San Juan Office of the Agricultural Adjustment Agency, or the Acting Officer in Charge thereof, are hereby designated to act, jointly or severally, as agents of the War Food Administrator in administering the provisions of this determination.

ASHLEY SELLERS,
Assistant War Food Administrator.

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Official Release

Fair and Reasonable Wage Rates for Hawaii During 1944.

Pursuant to the provisions of subsection (b) of section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order 9334, issued April 19, 1943, the following determination is hereby issued:

Fair and reasonable wage rates for persons employed in the production, cultivation, or harvesting of sugarcane in Hawaii during the calendar year 1944. The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the production, cultivation, or harvesting of sugarcane in Hawaii during the calendar year 1944, if all persons employed on the farm during that period in the production, cultivation, or harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefore at rates not less than the rates established for the period July 1, 1943 to December 31, 1943, in the "Determination of Fair and Reasonable Wage Rates for Persons Employed in the Production, Cultivation, or Harvesting of Sugarcane in Hawaii During the Calendar Year 1943", issued June 25, 1943, except that the annual average wage per farm for all harvesting and non-harvesting operations combined, after payment of wage increases under paragraph (b) (6) of said determination, shall not be less than $2.40 per eight-hour man-day.

In addition, the general provisions of paragraph (d) of the aforesaid determination shall apply for the calendar year 1944.

ASHLEY SELLERS,
Assistant War Food Administrator.

Official Release

Determination of Proportionate Shares for Sugarcane Farms in the Territory of Hawaii for the 1944 Crop.

Pursuant to the provisions of section 302 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Proportionate shares for sugarcane farms in the Territory of Hawaii for the 1944 *crop*—(a) *Farm proportionate share.*—The proportionate share for each farm in the Territory of Hawaii for the 1944 crop shall be the amount of sugar, raw value, commercially recoverable from sugarcane grown on such farm and marketed (or processed by the producer) for the extraction of sugar during the calendar year 1944.

(b) *Adherent planter protection.*—The provisions of this determination shall be subject to the following conditions:

(1) That no changes in the planter-plantation sugarcane and sugar production relationship shall have been made and

(2) That no reduction in the number of planters shall have been made under programs carried out pursuant to the Act, except such as are considered justified and are approved by the Chief of the Sugar Branch, Food Distribution Administration, and the Chief of the Agricultural Adjustment Agency, acting either jointly or severally.

Issued at Washington, D. C., this 22d day of January 1944.

ASHLEY SELLERS,
Assistant War Food Administrator.

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THE SUGAR BULLETIN

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We stand for the encouragement of Home Industries as against Foreign Competition

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Americans Can Think For Themselves

By C. J. Bourg

Mr. William P. Witherow, chairman of the Executive Committee of the National Association of Manufacturers, of whom he was formerly president, recently stated "If the United States is to hold its place in the international community after the war, we shall need some definite policy, or perhaps many policies, to guide our destinies. Whatever they prove to be, they must hold no surrender of American living standards."

He was addressing the annual dinner of the Export Managers' Club and his theme was "Maintenance of America's 'free enterprise ideals' in foreign trade will insure more real benefits to the peoples of the world than any business system yet devised, and will do more to avert World War III than any philosophy which can be written into the next treaty."

It is refreshing to have a nationally recognized business leader show the courage and foresight to insist upon being practical.

Mr. Witherow's address was full of good common sense and realistic thinking, such as the following two paragraphs:

> "We are not fighting a war for a better world only to wind up with less of the good things in it for ourselves and our children. If the only way we American people can maintain the manner in which all Americans expect to live, lies in the erection of tariff walls higher than 'flying fortress' altitudes, we shall do it that way, much as we dislike the thought. If we must become a completely self-contained economic unit to preserve our standards, that is the way it will be.
>
> "But, I do not believe that we shall have to become a hermit nation. Far from it. Our system of free, private enterprise based upon efficiency of production can compete successfully in the markets of the world. And I think we can sell or 'export' that idea abroad. We will all rediscover that the old adage concerning the 'better mousetrap' is still valid—despite artificial measures other nations may take to sell goods."

Those of us who speak for American producers within the United States have at times become concerned, if not alarmed, at the tendency towards excesses. "Reciprocal Free trade"—"One world and one market"—"Feed the World." Therefore, statements from prominent American citizens such as Mr. Witherow made and is, give reassurance that the American way and the American standards have firm roots and have permanence. We are a nation which describes great cycles in public thought and sentiment. When any movement is overdone, Americans have a refreshing and sustaining way of reversing the field. Prohibition overwhelmed the country for a few years, but the excesses of prohibitionists and the lawlessness produced, was just as revolting to the American citizens as had been the excesses and the lawlessness of the old time saloon keeper. The nationalist or isolationist had his day and his years, but his excesses gave the interventionist or internationalist his day and his years. The pendulum now swings back.

Today, even before the war has ended, we already see signs of what will be our competition in world trade in the post war period. High sounding charters are fading before the ill-concealing intentions of European nations. Mr. Witherow points fearlessly even to the preference for the highest possible tariff, if our competitors use cartels and government-subsidized competition on a world wide basis. We hope not. Yet he says it is logical to assume that there will be a revival of nationalistic thinking in every nation, such as existed following the first World War. He

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In This Issue

Americans Can Think for Themselves.....Cover
Sugarcane Wax Studies, 1942-1943..... 106
Recommendations for the Control of the Sugarcane Borer in Louisiana in 1944 by Dusting with Cryolite..... 109
Farming Practices in Hawaii..... 110
Average Prices for the 1943-44 Louisiana Season..... 111
Proportionate Shares for Sugarcane Farms in Puerto Rico..... 111

NOTICE

An additional duty, not enumerated in the notice relative to the position to be created by the American Sugar Cane League, published on page 99 of the April 1, 1944, issue of *The Sugar Bulletin* is "to function as a good-will ambassador in contacting small sugarcane growers to stimulate and retain interest in the League."

considers it quite likely that other nations in their attempt to develop their own self-sufficiency, will close their markets as best they can to American goods. He also reminds us that at the end of this war the United States will be an over-balanced creditor nation. It will be difficult to develop export markets for an overbalanced creditor, for the simple reason that other nations will have difficulty to buy from us and to pay for what they buy with money borrowed from us, even if they want our goods.

So, the prospects of a world wide WPA and of programs to feed all peoples according to the American diet, begin to bring about realistic thinking. Americans are generous by nature and in times of stress it is easy to appeal to their humanitarian instincts. But Americans are also practical, which gives substance to what Mr. Witherow has had the courage to state publicly. In our opinion, the people of the United States have begun to swing back towards nationalistic thinking. It is to be hoped that we can avoid excesses. Let us maintain the American standard of living and with it let us maintain our American industries. This should be done reasonably, without resorting to the extremes; but we will have to go as far as necessary, in order to maintain our standards and our industries, including a certain place in the picture for the continental sugar industry under a quota system—shall we say, made in the USA.

Sugarcane Wax Studies, 1942-1943*

By R. T. Balch and C. B. Broeg
Bureau of Agricultural and Industrial Chemistry, Agricultural Research Administration, U. S. Department of Agriculture, Houma, La.

Investigational work dealing with sugarcane wax was continued through the year. During the cane harvesting season particular attention was given to (a) the wax content of different varieties of sugarcane, (b) the effect of burning cane on its wax content, (c) a further study of the removal of wax from the cane in milling operations, and (d) the wax content of mud press cake from various factories. Pilot plant studies, dealing with the extraction and purification of sugarcane wax and other products, were conducted during the remainder of the year. Each phase of the work will be discussed briefly in this paper. The reader should consult the two previous reports (1, 2) in order to obtain a better understanding of the project as a whole.

Wax Content of Different Varieties of Sugarcane

Early in this work Fort (3, 4) pointed out the existence of a varietal factor in the wax content of Louisiana sugarcane. This subject was given further study and a new technic for determining crude wax in sugarcane was developed which, it is believed, is an improvement over the direct solvent extraction procedure previously employed. Briefly, the method is as follows:

A sample of finely divided sugarcane is pressed in a hydraulic press under conditions which extract between 80 and 85% of the juice. The bagasse briquet is weighed and analyzed for moisture and wax content. The wax is calculated to original cane basis. The juice is analyzed for its wax content by a combined trapping and solvent-extraction method similar

*Agricultural Chemical Research Division Contribution No. 131.

to the method described by Bardorf (5). Calcium hydroxide, calcium phosphate and lead acetate with or without added filter-aid were tried for trapping the wax. Each was equally effective but as lead acetate gave visual demonstration of effective clarification, this reagent was used in this study. The ordinary basic lead acetate used for sugar analyses was found satisfactory. The lead precipitate carrying the trapped crude wax is filtered into a Gooch crucible and is washed with water at room temperature until approximately freed of water-soluble substances. It is then dried and the wax extracted in the usual manner. A record is made of the amount of juice extracted from a given weight of cane in order to calculate the wax found in an aliquot portion of the juice to cane basis. With the type of hydraulic press employed (cage) most of the wax remained with the cake of bagasse rather than becoming dispersed in the juice as happens in commercial milling. For results of reasonable accuracy, it would be possible to dispense with the determination of wax in the juice, in which case a constant correction for the amount of wax in the juice would be added to the wax found in the bagasse. Each analyst should determine this correction as it would vary with the type of equipment and technic involved.

The wax content of different varieties of sugarcane determined by the method described above is given in Table 1. The data relating to the proportion of hard wax and fatty matter are based upon the fractionation of the crude wax extracted from the bagasse samples only. The amount of wax involved in the trapped material from the juices was so small as to make its fractionation unreliable. Even if the proportion of fats to hard wax were not the same from the two sources, the data reported would not be greatly in error. There seems to be almost as much variation between samples of a single variety as between samples of different varieties, the reasons for which are not well understood. Doubtless there are cultural factors not yet evaluated that greatly influence the amount of wax deposited on the cane stalks. There is a definite tendency, however, for certain varieties to have a high wax content and others to have a low wax content. Of the commercial varieties grown in Louisiana only C. P. 29/116 cane definitely has a low wax content. This verifies results obtained by Fort (4). Co. 290 cane appears to have about the highest hard wax content and the lowest fat content, with the possible exception of C. P. 807 which is scarcely grown any longer. The predominence of Co. 290 cane over other varieties grown in the western part of the Louisiana sugar district may be responsible, in a large measure, for the fact that the press cake from the factories located in the western section invariably contains a higher crude wax and a higher proportion of hard wax than press cake from factories located in the eastern section. Based upon the analysis of sugarcane, there is a potential yield of about 18 million pounds of crude wax from an annual 5 million-ton Louisiana sugarcane crop. Unfortunately, however, only about 40% of this wax, or a little over 7 million pounds, is obtainable from the waste clarification muds; the remainder of the wax is discarded with the bagasse, and it cannot be recovered profitably. This figure of 7 million pounds agrees well with that calculated from the mud press cake if one assumes a production of 16 pounds of dry muds per tone of cane processed and an average crude wax content of 9% in the dry mud.

Wax Content of Certain Products of Milling

In order to supplement information given in last year's report (2) regarding the distribution of wax in various factory products, particularly in juices and bagasse, a study was made of the wax content of these products from a single known variety (Co. 281) resulting from experimental milling experiments carried out under carefully controlled conditions.

In these tests, which were run in duplicate, 80 pounds of Co. 281 cane, thoroughly cleaned of trash, were put through an experimental 3-roller mill 5 times. Dry milling was used for the first two extractions and 16 pounds of water was added as imbibition water in the last three millings. The juice from the first milling (crusher juice) was weighed and analyzed separately from the remaining juices which were composited prior to sampling and analyzing. The bagasse was also weighed and analyzed. The results obtained in this series of tests are given in Table 2. It should be noted that the proportion of wax which became dispersed in the juice (41% of the total) is about the same as was found under commercial milling practices in spite of the fact that cold imbibition water was used in these tests. It may be concluded that the temperature of the imbibition water as usually employed has no pronounced effect upon the removal of the wax from cane. It is very likely that the mass of cane would have to be heated above the melting point of the wax before the benefit of a high water temperature would be noticeable.

Table 1. Wax Content of Millable Cane (1942 Crop from Houma Station)

Variety of Cane	Number of Samples	Crude Wax			Hard Wax		Fatty Fraction	
		Min.	Max.	Ave.	on Cane	on C. Wax	on Cane	on C. Wax
		%	%	%	%	%	%	%
C. P. 807	1	--	--	0.241	0.165	68.6	0.076	31.4
Co. 290	9	0.167	0.233	0.206	0.137	66.3	0.069	33.7
Co. 281	7	0.131	0.231	0.176	0.098	55.5	0.088	44.5
C. P. 28/11	1	--	--	0.186	0.109	58.5	0.077	41.5
C. P. 28/19	5	0.154	0.245	0.213	0.118	55.6	0.095	44.4
C. P. 29/103	5	0.162	0.190	0.176	0.099	56.2	0.077	43.8
C. P. 29/116	6	0.100	0.127	0.114	0.058	51.0	0.046	49.0
C. P. 29/120	4	0.174	0.193	0.186	0.101	54.4	0.085	45.6
C. P. 29/320	4	0.163	0.178	0.172	0.098	56.7	0.074	43.3
C. P. 34/120	4	0.122	0.185	0.163	0.091	55.8	0.072	44.2

Table 2. Wax Removal fron Sugarcane by Milling—Co. 281 Cane

Test Number	Crude Wax Content of Mill Products						Total Crude Wax	Wax Removed by Milling
	Crusher Juice		Remaining Juices		Bagasse			
	on juice	on cane	on juice	on cane	on sample*	on cane		
	%	%	%	%	%	%	%	%
1	0.044	0.022	0.064	0.023	0.576	0.086	0.131	34
1a	0.054	0.025	0.073	0.030	0.550	0.076	0.131	42
2	0.061	0.040	0.073	0.020	0.602	0.085	0.145	41
2a	0.070	0.045	0.088	0.025	0.564	0.080	0.150	47
3	0.076	0.048	0.062	0.019	0.798	0.118	0.185	41
3a	0.059	0.036	0.081	0.024	0.520	0.073	0.133	45
Average		0.036		0.024		0.086	0.146	41

* Dry weight.

Table 3.
Effect of Trash Removal by Burning on Crude Wax Content of Sugarcane

Variety of Cane	Number of Samples	Crude Wax Content			
		Normal Cane	Burned Cane	Change	
				Actual	Percent
		%	%	%	
Co. 290	3	0.226	0.206	—0.020	—9.0
Co. 281	1	0.191	0.176	—0.015	—7.8
C.P. 28/19	1	0.245	0.234	—0.011	—4.5
C.P. 29/116	1	0.117	0.244	+0.127	+108
C.P. 36/70	1	0.164	0.207	+0.043	+26

The Effect of Burning Trash on the Wax Content of Cane

It has been claimed by Clacher (6) that burning cane for the purpose of removing trash—cane leaves, etc.—lowers the wax content of sugar factory press cake from about 14 to 10%. The experiments reported in Table 3 are not sufficiently complete to confirm or refute this claim since the cane was not carried through factory processing. An attempt was made, however, to determine how the crude wax of sugarcane was affected by the method of burning adopted by the Louisiana sugar industry, namely, by firing small piles of trashy cane laid across the ridges after the green leaves have become withered.

Table 4.
Wax Content of Clarification Mud Press Cake—1942 Season.

District	Factory	Number of Samples	Crude Wax-Moist.-free cake Ave. Hard Wax. Min.	Max.	Ave.	Ave. Acetone Soluble On Sample	On C. Wax	On Sample	On C. Wax
			%	%	%	%	%	%	%
Eastern	1	5	6.78	9.70	8.70	5.90	67.87	2.80	32.13
	2	6	8.19	12.39	9.69	6.19	63.88	3.50	36.12
	3	2	9.34	12.90	11.12	8.13	73.09	2.99	26.91
	4	3	5.94	9.63	7.99	5.32	66.63	2.67	33.37
	5	5	5.83	8.39	7.47	5.17	69.16	2.30	30.84
	6	8	5.85	11.09	9.26	6.04	65.21	3.22	34.79
	7	3	3.26	7.38	5.32	3.67	69.03	1.65	30.97
	8	6	6.78	9.77	8.70	5.87	67.48	2.83	32.52
	9	5	5.30	9.42	7.21	4.48	62.20	2.73	37.80
	10	9	7.92	13.69	10.33	6.94	67.19	3.39	32.81
	11	4	5.99	11.08	7.86	5.55	70.63	2.31	29.37
	12	1	--	--	10.58	7.50	70.92	3.08	29.08
	Weighted Average				8.75	5.86	66.97	2.89	33.03
Western	1	4	10.54	12.59	11.23	8.42	74.98	2.81	25.02
	2	9	14.08	18.90	16.02	11.92	74.39	4.10	25.61
	3	6	8.98	15.58	13.19	10.11	76.68	3.08	23.32
	4	3	10.06	13.82	13.04	10.01	76.75	3.03	23.25
	5	3	14.02	14.87	14.47	10.53	72.78	3.94	27.22
	6	4	9.27	12.88	10.88	8.35	76.71	2.53	23.29
	7	Composite	--	--	12.83	9.67	75.38	3.16	24.62
	Weighted Average				13.57	10.22	75.31	3.35	24.69

Table 5.
Summary of Wax Content of Louisiana Clarification Mud Press Cake.
(Moisture-free basis)

District	Season	Number of Samples	Crude Wax	Hard Wax	Acetone Sol. Fract. On Mud	On C. Wax.
			%	%	%	%
Eastern	1940	7	6.99	4.47	2.52	35.79
	1941	39	9.19	6.32	2.87	31.23
	1942	57	8.75	5.86	2.89	33.03
		Average	8.80	5.94	2.86	33.35
Western	1940	9	12.77	9.76	3.01	23.57
	1941	84	11.89	9.09	2.80	23.55
	1942	30	13.57	10.22	3.35	24.66
		Average	12.36	9.41	2.95	23.93

Table 6.
Deterioration of Mud Press Cake.
(Moisture-free basis)

Source	Storage Period	Storage Condition	Crude Wax Content	Crude Wax Loss	Hard Wax Content	Hard Wax Loss	Acetone-sol. Fract. Content	Acetone-sol. Fract. Loss
	weeks		%	%	%	%	%	%
Factory 1	0	--	16.51	--	12.72	--	3.79	--
	4	wet	13.27	19.6	11.65	8.4	1.62	57.2
	8	wet	11.91	27.9	10.07	20.8	1.84	51.5
	12	wet	10.01	39.4	8.41	33.9	1.60	57.8
Factory 2	0	----	7.50	--	5.12	--	2.38	--
	4	wet	7.38	16.0	4.97	2.9	2.41	-1.3
	8	wet	5.24	30.1	3.69	27.9	1.55	34.9
	12	wet	4.16	44.5	3.00	41.4	1.16	51.3
Factory 3	0	----	12.71	--	8.90	--	3.81	--
	4	wet	11.99	5.7	9.22	-3.6	2.77	27.3
	8	wet	10.39	18.7	8.76	1.6	1.63	57.2
	12	wet	10.56	16.9	8.47	4.8	2.09	45.1
Factory 4	0	----	17.36	--	13.87	--	3.49	--
	4	wet	14.24	18.0	11.87	14.4	2.37	32.1
	8	wet	14.70	15.3	12.55	9.5	2.15	38.4
	12	wet	15.17	12.6	12.46	10.2	2.71	22.3
Average 6 samples	0	----	13.12	--	9.46	--	3.66	--
	30	air dry	12.36	5.8	8.38	11.4	3.98	-8.7

Six stalk samples were taken from individual heaps before and after firing and they were further cleaned by hand prior to grinding, pressing and analysis. Judging from the results obtained, which are summarized in Table 3, the experimental errors were rather large, for in some instances firing apparently decreased the amount of wax found while the reverse was the case with other samples. It appears that burning the trash did not destroy much, if any, of the wax, but inspection clearly indicated considerable melting of the wax. It is conceivable that after the wax had been melted it will adhere to the rind more tenaciously than unmelted wax during the milling operations. If this occurs the wax content of the mud press cake is certain to be lowered. Further study of this question should be made, for it has very practical significance. It was noted that burned cane always yielded darker crude waxes than unburned cane which means that burning adds to the color problem.

Wax Content of Sugar Factory Mud Press Cake

Through the co-operation of sugar-factory operators samples of clarification mud press cake were submitted for analysis at about weekly intervals throughout the season. The method for determining wax was the same as used in previous seasons with the exception that benzene was used instead of carbon tetrachloride for making the extractions. The results, summarized in Tables 4 and 5, are expressed on the moisture-free basis.

The results show that the wax content of the mud press cake from the factories located west of the Atchafalaya River is appreciably higher than the wax content of the press cake from the factories located east of this river. It may be, as already stated, that this difference is due principally to the fact that the western factories process a considerably larger proportion of Co. 290 cane than do the eastern factories. This fact would also explain the much higher proportion of hard wax found in the presscake from the factories located west of the river. (See Table 1.)

From these results, it is obvious that the best source of wax from the standpoint of commercial extraction would be the press cake from the group of factories located in the western section of the sugar-growing area of Louisiana. Since there are a few factories located in the eastern section of the area that produce press cake having a relatively high wax content it leads one to wonder why this occurs. It is quite likely that more light would be thrown on this question if the actual weight (dry) of the mud press cake from different factories were available. Unfortunately, in most cases the wet weight of press cake is only estimated and the moisture never determined. It is known, however, that many factors influence the weight of clarification muds as the weather, variety of cane, soil, fertilizer, milling and clarification practices, and each in turn would affect the wax content of the clarification mud press cake. There is need for considerable study of factors that affect the wax content of the press cake for it may be possible to increase the wax content materially without introducing deleterious effects in factory operation, thereby increasing the value of the press cake as a source of valuable by-products.

Deterioration of Mud Press Cake

It has long been known (7, 8) that when clarification muds are allowed to ferment the wax content decreases upon aging and that the hardness of the

crude wax improves. This indicates that the fats are consumed by the microorganisms more rapidly than the wax. Since no data were available, some preliminary results were obtained by analyzing 4 samples of muds periodically after being stored under wet conditions as might be met if the muds were placed in a pile and allowed to weather. The summarized results are given in Table 6.

The data do not seem to be as consistent as one might expect but this is doubtless due to faulty sampling of the mass which had undergone uneven deterioration. It is evident, nevertheless, that wet muds deteriorate with considerable rapidity in respect to both the hard wax and the fatty constituents. For some reason, it would appear that mud cake from plate presses deteriorates at a more rapid rate than mud press cake from vacuum filters. (Compare factory samples 1 and 2 with 3 and 4.) It is possible that more complete removal of sugars and water-soluble matter, which usually occurs in the operation of the vacuum filters, causes the activity of microorganisms to be lessened or changed in some manner which results in a lower rate of wax and fat destruction.

As might be expected, drying freshly produced muds greatly reduces the rate of deterioration. One might have expected greater stability than has been found to be the case if the average analysis of 6 samples that had been stored for 30 weeks is indicative. These samples showed a loss of almost 6% in the crude wax content and a possible transformation of some of the waxy constituents into acetone soluble matter with a loss of hard wax and a gain of fatty material.

(To be continued in the May 1st issue of The Sugar Bulletin)

Recommendations for the Control of the Sugarcane Borer in Louisiana in 1944 by Dusting With Cryolite

The following recommendations are made for insecticidal control of the sugarcane borer (*Diatraea saccharalis* (F.) in Louisiana in 1944.* They are based on extensive cooperative investigations conducted since 1937. Either the first or the second generation of borers may be controlled by dusting with synthetic or natural cryolite, although seldom should it be necessary to dust the same field for both generations.

First-Generation Control

First-generation borers are those hatching from eggs laid by moths that have come from overwintered larvae. They begin to appear in large numbers about April 15-30, at which time dusting should be begun. Dusting is recommended for the control of first-generation borers (1) over an entire plantation, (2) on heavily infested areas from which there may be a substantial spread of borer moths into adjoining areas, and (3) on smaller areas with a localized infestation. Dusting of a small part of a large infested area for the control of first-generation borers is a waste of effort because of the possibility of reinfestation from the nearby untreated cane.

The following points are important for successful control of first-generation borers:

1. Dust four times at weekly intervals, beginning with the first hatching of young borers.
2. Apply dust at the rate of about 8 pounds per acre per application, while the air is quiet and

the SUGARCANE BORER

and increase your crop yields

It will pay you well to *go after* the sugarcane borer which causes so much damage to your crop.

Extensive tests prove the efficiency of Natural Cryolite for the control of the sugarcane borer.

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The ravages of this destructive insect cause an annual loss to the sugar industry of approximately $5,000,000! Authorities recommended the use of cryolite as an effective and economical control measure—and Kryocide is NATURAL CRYOLITE.

The cost of dusting with Kryocide will amount to about $6.00 per acre. *And the savings in increased yield can run as high as seven tons of cane per acre* . . . Moreover, borer control means reduction of red rot disease, a further advantage of dusting with Kryocide.

Kryocide can be easily and efficiently applied with standard dusting equipment. Follow the recommendations of your local experiment station.

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the plants are wet with dew, which is usually between about 6 p. m. and 9 a. m.

3. Use an airplane or power dusting machine for treating large areas. Rotary hand guns may be used in small areas. Under present conditions, it appears that dusting more than 300 acres on any one plantation by ground machine is impractical.
4. Use one or two nozzles to the row. Two nozzles, however, give some insurance against incomplete coverage through clogging of a nozzle.

The estimated cost of dusting for the control of first-generation borers with power dusting machines is $5 per acre, and by airplane $6 per acre. About 10 acres can be treated per hour with a 3-row dusting machine and about 15 acres per hour with a 5-row machine. One man with a hand dust gun can dust about 1 acre per hour.

Second-Generation Control

Second-generation borers begin to appear about June 10 to 25. Dusting to control the second generation is recommended for fields not previously dusted, and for entire plantations or small areas where there is danger of reinfestation from adjacent untreated cane. The important points to be observed are as follows:

1. Dust four times at weekly intervals as for first-generation borers, beginning with the first hatching of second-generation borers.
2. Apply the dust between 6 p. m. and 9 a. m. at the rate of about 10 pounds per acre per application.
3. Use an airplane, rotary hand guns, or a power dusting machine built up high enough to avoid breaking the cane. Large-scale dusting must necessarily be done by airplane.

The cost of dusting for second-generation borers is slightly more than that for the first generation; and, if done by ground equipment, the time required for making an application is somewhat longer.

*These recommendations were prepared jointly by the Louisiana Agricultural Experiment Station and the Bureau of Entomology and Plant Quarantine of the Agricultural Research Administration, United States Department of Agriculture.

Official Release

Determination of Farming Practices to Be Carried Out in Connection With the Production of Sugarcane During the Crop Year 1944 for the Territory of Hawaii.

Pursuant to the provisions of section 301 (e) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Farming practices in connection with the production of the 1944 *crop of sugarcane in the Territory of Hawaii*—(a) *Application of fertilizer.*—The requirements of section 301 (e) of the Sugar Act of 1937, as amended, shall be deemed to have been met with repect to a farm in the Territory of Hawaii if fertilizer is applied as follows:

(1) *Amount.*—There shall be applied to land on which sugarcane is growing during 1944 sufficient chemical fertilizer to provide an average quantity of plant food per acre fertilized equal to not less than 100 pounds.

(2) *Acreage requirement.*—The number of acres on which fertilizer is applied in 1944 shall be not less than 80 per cent of the number of acres on the farm on which sugarcane is planted, or a ratoon crop of sugarcane is started, at any time during 1944.

(3) *Definition.*—"Chemical fertilizer" means commercial chemical fertilizer of which not less than 15 percent of the gross weight consists of plant food. "Plant food" means the aggregate amount of nitrogen, available phosphoric acid and water-soluble potash.

Done at Washington D. C., this 20th day of January, 1943.

WILSON COWEN,
Assistant War Food Administrator.

Official Average Prices for the 1943-44 Louisiana Season

The Agricultural Adjustment Agency has announced its official prices for the 1943-44 Louisiana season —October 8th, 1943, through March 30th, 1944—to be as follows:

Season's Average Price for Louisiana Raws 3.73 f.o.b. New Orleans.

Season's Average Price for Louisiana Blackstrap 18 cents a gallon in bulk f.o.b. plantation.

Season's Average Price for Standard Sugarcane $3.833 per ton.

Molasses Bonus 32.50 cents per ton of actual cane.

Incentive Payment 33 cents per standard ton of cane.

Incentive Payment for Java Formula cane after January 8, 1944, 33 cents per actual ton of cane.

Official Release

Determination of Proportionate Shares for Sugarcane Farms in Puerto Rico (Revised)

Pursuant to the provisions of section 302 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Proportionate shares for sugarcane farms in Puerto Rico for the 1943-44 *crop*—(a) *Farm proportionate share.* The proportionate share for each farm in Puerto Rico for the 1943-44 crop shall be the amount of sugar, raw value, commercially recoverable from sugarcane grown on such farm and marketed (or processed by the producer) for the extraction of sugar during the 1943-44 crop season.

This determination supersedes the "Determination of Proportionate Shares for Sugarcane Farms in Puerto Rico, Pursuant to the Sugar Act of 1937, as Amended," issued December 31, 1942, insofar as that determination relates to proportionate shares for the 1943-44 crop.

Issued at Washington, D. C., this 22d day of January 1944.

ASHLEY SELLERS,
Assistant War Food Administrator.

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Consumers' Guide Says Nice Things About Sugar

By C. J. Bourg

There's been some changes made! In 1941 and 1942 the references to sugar in Government publications were anything but friendly to the sugar industry. That was particularly true of publications directed to American consumers. Since those days former Congressman Marvin Jones has become War Food Administrator, the OPA is now operated by officials who have come from business offices and 1944 is a national election year. Perhaps the article which appeared in the *Consumers' Guide* for April, 1944, a publication of WFA, simply reflects further studies and understanding. Whatever the reason, the article reproduced below represents something new and favorable in publicity policy. We cannot yet say that the policy is what it should be, but the changes made have been for the better. By reprinting the article in *The Sugar Bulletin* we hope to further stimulate a more friendly and factual policy with respect to the domestic sugar producing industry. Naturally we would have preferred to see mention of the fact that Louisiana has increased its production of sugar steadily under war conditions, which means under great difficulties. We would have been proud to have the Government recognize that Louisiana is once again the greatest sugar-producing State in the Union. We are nonetheless grateful for favorable mention.

YOUR SUGAR BOWL'S A BOMB!

This year, more sugar than ever before is flowing into factories, to be used in manufacturing explosives, sythetic rubber, and a variety of other vital war war materials. Although civilian supplies will probably be tight, everything is being done to see that your rations will not be seriously affected. Here is the story of sugar's fighting role in this war.

The first time war struck on the consumer food front was in those February days of 1942 when we lined up for our first ration books. The first food to be rationed was sugar. It led the list for good reasons. Stocks of sugar were greatly reduced by the record takings of consumers in 1941. Submarines were rampant along our Atlantic Coast, and ship after ship was going to the bottom. Our shipyards were not geared for replacements. The Philippines, which normally furnished about 15 per cent of our sugar, were in Jap hands. Naturally sugar was scarce. So sugar was the first food to make its departure for war felt on our tables.

Then 10 months later when the undersea wolf packs were tamed by our Navy and ships were launched faster than they were destroyed, the transportation problem eased and large quantities of sugar became available. Nevertheless, the increased demands of war for sugar still make great inroads on our supplies. For sugar goes to war in different forms than as candy bars for our far-flung canteens, in K-rations, and for our armed forces' coffeecups. In fact, that demand is roughly only about 10 percent of the service which sugar gives toward victory.

We, on the home front, have our own tremendous demands for sugar. Home canners don't need to be told what a vital part sugar is playing in the preservation of food. This year, as in previous war years, a large quantity of sugar will be set aside to meet civilian demands for canning purposes. We expect to receive the same amount of sugar for canning that we did last year—25 pounds per person. Stamp No. 40 will enable you to buy 5 pounds of canning sugar at your local store any time during this year. If you need more, you can apply to your local Price

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Marcel J. Voorhies, Editor

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In This Issue

Consumers Guide Says Nice Things About Sugar ..... Cover

Mr. Edward P. Munson Joins the Staff of the American Sugar Cane League..... 115

Research on Insecticidal Control of the Sugarcane Borer in 1943 by the Houma, Louisiana, Laboratory..... 115

Sugarcane Wax Studies 1942-1943 (Continued) 117

Selective Service Memorandum..... 119

and Rationing Boad. Your applications should be in writing, and should be accompanied by Ration Book No. 1 for each person for whom application is made. You should also mention the total number of quarts or pounds of finished fruit to be put up, and the quantity of sugar to be used for making jams and jellies.

But the combined military and direct civilian needs for sugar, as a food, still represent only a part of its total war uses. Sugar flows into the roaring plants of industry. There's hardly a war commodity of which sugar is not a necessary part. Normally, black strap molasses, a byproduct of sugar, is the chief source of industrial alcohol, and alcohol goes into the making of an endless variety of products. The alcohol made from blackstrap molasses, by the way, is strictly for industrial uses, and not for beverage purposes. This year, however, as in 1941 and 1942, vast quantities of invert molasses, from which no sugar is extracted, are needed in the manufacture of industrial alcohol. This invert molasses will mean the loss of 800,000 tons of sugar for food purposes. Our factories are also going to use more grain for alcohol than they did last year. But our industrial alcohol program is expanding so rapidly, and grain is so vital for food and feed, that sugar has become an indispensable material in the making of alcohol.

One of the most important products derived from industrial alcohol is synthetic rubber. During the coming year, industrial alcohol is expected to supply about 53 percent of all the butadiene employed by our synthetic rubber industry. Butadiene is the chemical element out of which all synthetic rubber is formed. The importance of synthetic rubber, on both the home and war fronts, could hardly be overemphasized Without it our armies would be stalled, and many useful and necessary activities here at home would be forced to an abrupt halt. Production on many farms would be slowed down, if farmers were unable to obtain tractor tires and had to rely entirely on horsepower again. The manufacture of tires and inner tubes is an important use for synthetic rubber, but it is not the only one. Synthetic has substituted for natural rubber in thousands of consumer products, and in many of them it is said to be superior.

You have often heard the phrase "food is a weapon." In the case of sugar this phrase is literally true, as sugar, via industrial alcohol, is used to manufacture explosives. Some sugar was used to make almost every bomb that is being dropped on Germany. Most of the shells that are battering the Axis into defeat are made from sugar derivatives. And sugar is making hand grenades for our Marines to blast the Japs out of their island fox holes. Sugar looks innocent enough in the bowl on your table, but it can be turned by various stages of manufacturing into a potent agent of destruction.

Another important industrial use of sugar is in the manufacture of plastics. This versatile branch of the chemical industry is supplying an ever-increasing variety of commodities, from soup pans to airplanes. Most important plastics derived from sugar are celluloid and celloglass. Right now, plastics are playing a vital war role by substituting for metal in many different ways. The chemical industry is also opening up new uses for sugar, in the manufacture of dyes, varnishes, and medicines.

Taken all in all, sugar is doing a man-sized job in this war. Other uses not so spectacular as those

already mentioned, are no less important. Almost every convoy that crosses the ocean, carries sugar for our allies, and for the people in liberated areas. Relief needs for sugar are expected to be fairly large, and it will probably be used in relief rations, to strengthen the resistance of starving people in war-wrecked territories all over Europe. The Red Cross is distributing sugar to aid prisoners of war, and war refugees. Some Red Cross sugar has been sent to India, to help check the present famine. Recently, the Red Cross requested sugar allotments from the War Food Administration, to relieve the hunger of hundreds of penniless Polish refugees, driven out of their home country by the Germans and now settled in Africa. Sugar is placed in each Red Cross parcel that is sent to Switzerland for later distribution to prison camps in Germany and Italy.

All these demands together are making a large dent in our sugar stock. But in spite of the fact that the total demand for sugar this year has greatly increased over last, the OPA doesn't expect that consumer rations will be drastically affected. It may not be necessary to cut household rations at all. The total allocation of sugar for civilians this year is only 6 per cent less than the quantity of sugar believed to have been consumed by them last year. Stamp No. 30 in your War Ration Book No. 4 will continue to be good for an indefinite period of time. Like many other foods related to war demands the supply of sugar is tight. But don't be misled by any "scare" stories.

Our present sugar stocks are being built up from several different sources. We usually grow about 30 percent of our sugar here in the continental United States. Most of this 30 per cent comes from the various beet growing States in the Middle West and Far West, and the rest from sugarcane grown in Florida and Louisiana. Last year, our beet sugar supplies were about 40 per cent less than the supply in 1942. Perhaps the chief reason for this was that sugar beets require extensive use of labor. Apparently the farmers, therefore, had more incentive to plant crops which were remunerative and which required less labor. The Louisiana cane crop, however, showed some increase, although this expansion in cane production was not large enough to balance the decline in beet output. Sugar production in these mainland areas may expand in 1944 as a result of the increased price support offered by the Federal Government.

Before the war broke out, we got large quantities of sugar from the Philippines, Hawaii, Cuba, and Puerto Rico. Now that the Philippines are temporarily in enemy hands, we have been depending more and more on the supplies of the other three areas; particularly those from Cuba. Almost the entire Cuban crop has been bought by this country, during the last 3 years, and Cuba has increased her sugar output this year, to help fill the growing sugar requirements of the United States and our allies.

Cuba is also producing much of the molasses that is going into our synthetic rubber, explosives, and plastics, via industrial alcohol.

Puerto Rico and Hawaii have been producing about the same quantity of sugar as they did before the war. However, because of shortages of fertilizer and machinery, the sugar output of these domestic insular areas may decline this year.

Despite the difficulties of importing sugar supplies from abroad, of maintaining production here at home, and of assuring an adequate distribution of sugar to our wartime industrial program, everything is being done to see that civilians have adequate supplies this year. Sugar is going to keep on fighting on both fronts this year, and it will continue to play a major part in winning this war.

Mr. Edward P. Munson Joins the Staff of the American Sugar Cane League

Appreciating the importance of hastening the development and distribution, for commercial propagation, of new sugarcane varieties, the need for concerted efforts in promoting large-scale insect and disease control measures and the desirability of increasing personal contacts between the American Sugar Cane League and the rank and file of sugarcane producers, the Executive Committee, of the League, on April 26, 1944, accepted the recommendation of a Special Committee appointed to consider the matter, that Mr. Edward P. Munson be employed to handle all these important activities as a member of the League's staff.

Mr. Munson is to perform the duties outlined in *The Sugar Bulletin* of April 1st and 15th as well as any other assignments determined on by the League.

Mr. Munson brings to the League a long practical experience and a pleasing personality and he will, in the capacity assigned to him, certainly contribute in a very important way to the many services which the organization is providing for the benefit of the sugar cane growers.

Research on Insecticidal Control of the Sugarcane Borer in 1943 by the Houma, Louisiana, Laboratory

By J. W. Ingram, E. K. Bynum, W. E. Haley, and L. J. Charpentier, U. S. Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine.

In 1937 the Houma, Louisiana, laboratory and the Louisiana Agricultural Experiment Station undertook jointly to find an insecticide to control the sugarcane borer, *Diatraea saccharalis* (F.). From these joint investigations it was learned that the borer could be controlled by cryolite (1), (3). Results of additional research on this project in 1943 follow:

Airplane vs. ground-machine dusting for control of first-generation borers.—In 1942 the Houma laboratory found that airplane dusting was an effective means of applying cryolite dust to control second-generation borers, giving as good results as ground dusting (2). In 1943, 7 experiments were conducted on Cypremort and on Georgia Plantations to determine whether airplane dusting was as effective as ground-machine dusting in controlling first-generation sugarcane borers. Single cuts of cane about 2 acres in size were dusted 4 times at weekly intervals by each method, with 8 to 9 pounds of cryolite per acre per application. Airplane dusting gave better control in 2 experiments, ground dusting in 1 experiment,

and about equal control was obtained in the other 4 experiments. The average numbers of borers surviving per acre in 16 replications of airplane dusting and 21 replications of ground-machine dusting were 103 and 102, respectively. It thus appears that, under conditions prevailing in 1943, airplane dusting was as satisfactory as ground-machine dusting in applying cryolite to control first-generation borers. Comparison of dusted and undusted cuts indicated 77 to 91 percent control.

One nozzle vs. 2 nozzles per row in ground-machine dusting.—Nine cuts of cane on Waterford Plantation were dusted using 2 nozzles per row in applying cryolite for control of first-generation sugarcane borers. Nine alternate cuts were dusted with 1 nozzle per row. In examinations following dusting it was found that an average of 102.5 borers survived per acre in cuts dusted with 1 nozzle and that 117.6 survived in cuts dusted with 2 nozzles. It appears that the use of 1 nozzle per row gave fully as good control as the use of 2 nozzles per row.

Synthetic vs. natural Cryolite.—Experiments since 1937 have indicated that control from cryolite depended on the percentage of sodium fluoaluminate and on the ability to apply the material properly. In 8 cuts dusted with synthetic cryolite applied by ground machine alternated with 6 cuts dusted with natural cryolite, the average number of borers surviving per acre was 69 in synthetic-cryolite cuts and 94 in natural-cryolite cuts. However, the average number of borers surviving per acre for 4 locations in this experiment was 97 in the synthetic-cryolite plots and 99 in the natural-cryolite plots.

Diluted natural cryolite (72 percent sodium fluoaluminate), used at the rate of 10 pounds per acre per application, was compared with undiluted synthetic cryolite, used at the rate of 8.65 pounds per acre per application, on alternate cuts of cane on Cypremort Plantation for the control of first-generation borers. The average number of borers per acre surviving treatment was 302 in 7 diluted natural-cryolite cuts and 293 in 9 synthetic-cryolite plots. On Goldmine Plantation airplane dusting of synthetic and natural cryolite for second-generation borer control was compared by dusting 5 randomized cuts of cane with each dust. Five randomized cuts were left untreated as a check on the control obtained. The average percentages of joints bored following dusting were: Synthetic-cryolite cuts, 8.2; natural-cryolite cuts, 7.4; and untreated cuts, 14.8. The percentages of joints bored at harvesttime were: Synthetic-cryolite cuts, 28.9; natural-cryolite cuts, 27.8; and untreated cuts, 42.

Large-acreage experiments in control of first-generation Borers.—In addition to the preceding experiments, eight large-acreage experiments were conducted on control of first-generation borers by ground-machine dusting with cryolite. On most of these experiments the most heavily infested areas were dusted, leaving the more lightly infested areas as checks. Thus in most cases the control obtained was probably somewhat greater than that found by comparing the dusted and nondusted areas. On Waterford Plantation a control of 83 percent following dusting and 55 percent at harvesttime was found in comparable areas. On Georgia Plantation the percentages of control were 84 following dusting and 25 at harvesttime; on Little Texas, 91 and 22; and on Clovelly, 42 and 31. Although no comparable undusted areas were available to check against, it was apparent that good control was obtained on Columbia, Johnson, and Cypremort Plantations. On Cypremort Plantation the infestation at harvesttime was 36 percent less following dusting in 1943 than in the same field following first-generation dusting in 1942, when a satisfactory control at harvesttime was obtained. The borer infestation in the Cypremort area, however, was less in 1943 than in 1942. Unsatisfactory control was obtained in a 50-acre dusting experiment on Reserve Plantation.

Control of second-generation borers by airplane dusting in large-acreage experiments.—Experiments conducted by the Houma laboratory in 1942 indicated that application of cryolite dust by airplane was as effective as ground-machine application for control of the second generation. To obtain more information on the benefit obtained from the control of this generation, additional airplane-dusting experiments were conducted in 1943. Four applications of synthetic cryolite at 7- to 12-day intervals were made at the rate of about 10 pounds per acre per application, in most cases at 7-day intervals, although the last one was made in some experiments after an interval of 11 days, the delay resulting from rain and mechanical difficulties. The experiments were all located on fields that had not previously been dusted for control of first-generation borers. In carefully checked experiments on four plantations the percentages of control obtained immediately following dusting and at harvesttime were: Southdown, 80 and 52; Ashland, 51 and 37; Raceland, 48 and 37; and Johnson, 40 and 32. On Cypremort all infested fields closely comparable with those dusted had been treated for first-generation borer control and thus could not be used as checks. However, the airplane-dusted areas had 50 percent less borer injury at harvesttime than untreated fields, whereas in previous years when not dusted these areas had normally suffered greater injury. It might also be stated that on Johnson Plantation the check area normally suffers a lower borer infestation than the dusted area.

Injury by the yellow sugarcane aphid following dusting.—Since the beginning of cryolite dusting in 1937, the yellow sugarcane aphid, *Sipha flava* (Forbes), has shown a heavy increase in numbers following cryolite dusting. The multiplication of this species is apparently due mainly to the effectiveness of the cryolite in killing the insects that feed on it. This increase in aphids apparently has little effect on the sugarcane at the time of first-generation dusting, but their increase in some fields of Co. 290 was so heavy following second-generation dusting in 1943 that their damage may have partly offset the benefit of borer control. Heavy increases in yellow sugarcane aphid populations have also been noted at times on C. P. 29/103. Even without dusting, these varieties often have fairly heavy infestations of this aphid, apparently due to the protection afforded by their broad leaves. This aphid also multiplies on other commercial varieties following dusting, but has not been observed to multiply on them to the extent that it did on Co. 290. In preliminary replicated experiments on summer-planted cane in September and October 1943, the addition of 1 per cent of nicotine to each of four cryolite applications or 2 percent of nicotine to alternate cryolite applications did not decrease the number of yellow sugarcane aphids under that in plots dusted with synthetic cryolite alone. Injury by the yellow sugarcane aphid, even on nondusted cane, was heavier than usual at the time of second-generation dusting in 1943, undoubtedly as a result of the unusually dry weather prevailing at that time.

The yellow sugarcane aphid has never been found to transfer sugarcane mosaic, although numerous trials have been made with it by Ingram and Summers at the Houma laboratory (4) and by workers in other countries. The three aphids known to transfer mosaic disease in Louisiana do not multiply following dusting to the extent that the yellow sugarcane aphid does, because they are kept under control to a great extent by parasites, which are little affected by the dust, whereas the yellow sugarcane aphid is seldom parasitized, presumably because of the protection given by spines growing on its body.

Results of experiments on small replicated plots.—Small plot experiments about 1/20 acre in size afford a much more accurate means of testing new insecticides and variations in methods than do large-acreage experiments. Several promising new insecticides were tried against the borer in 1943, but all failed to give as good control as cryolite. The new chemical DDT, which has recently proved so promising for control of certain insects, was tested at 16-percent strength in pyrophyllite dust but gave only 74 percent control of the borer, when straight cryolite dust gave 97 percent control.

In small-plot experiments on second-generation borers, the average percentages of joints bored following dusting in C. P. 29/103 cane were: Untreated, 30.7; natural cryolite applied with dew on plants in the morning, 6.5; and the following with synthetic cryolite —applied with dew on the plants in the morning, 8.6; after dew had dried in the morning, 13.2; in late afternoon, 7.2; and redusted after rains, 4.5. By harvesttime the plots dusted with synthetic cryolite had 37.3 percent of the joints bored and the untreated plots had 44 per cent of the joints bored, the influx of borers of succeeding generations having overcome much of the control obtained, as is to be expected in small plots.

In small-plot experiments on control of second-generation borers on Reserve Plantation very little control was obtained in examinations following dusting in varieties C. P. 28/19 and C. P. 29/116. A control of 21 percent was obtained in Co. 281 and 73 percent in C. P. 29/103. On the planting at Houma the best control was obtained on C. P. 29/103, Co. 290, and C. P. 28/11.

Discussion.—It is apparent from the results of experiments conducted by the Houma laboratory that, under the conditions prevailing in 1943, airplane dusting gives as good control of first-generation borers as ground-machine dusting, one nozzle per row gives as good control as two nozzles per row in ground-machine dusting for first first-generation borers, and synthetic and natural cryolite give approximately the same degree of control if they can be applied with equal facility.

On most plantations where large-acreage experiments in dusting were conducted by the Houma laboratory the infestation was somewhat less than in 1942, but even under the decreased infestations the dusting apparently more than paid for the expense. Although one of the plantations had an increase of 7 tons per acre over the yield in 1942, the growers were warned not to attribute all this to borer control, because a gain of several tons undoubtedly resulted from other conditions more favorable than those in 1942. The yellow sugarcane aphid multiplied to injurious numbers on the variety Co. 290 under conditions prevailing in 1943, but may be less of a problem if wetter weather prevails during the period of dusting for the second generation in 1944. Better control is apparently obtained from dusting C. P. 29/103 than any other variety.

Judging by the results obtained since 1937, cryolite dusting is of much value as a borer control and should be a common agricultural practice; however, growers should remember that it cannot be expected to pay in fields having a low borer infestation.

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Sugarcane Wax Studies, 1942-1943
(Continued)

By R. T. Balch and C. B. Broeg

Pilot Plant Studies

A number of phases of wax extraction were studied during the year. Those of most importance were concerned with (a) crude wax extraction as affected by the type of solvent, the temperature of extraction and the physical condition of the mud press cake particles; (b) the fractionation of the crude wax into its fatty and wax components by different solvents; (c) the relationship between the type of solvents used for crude wax extraction and refining operations and the physical and chemical properties of the hard wax produced from different sources; and (d) methods of refining the dark hard wax to produce wax of light color which might enhance its value for special applications.

In last year's report (2) a comparison was made of different solvents for the extraction of crude wax. These included toluene, benzene and a petroleum naphtha. Since then, further tests have been made with toluene and with two additional types of petroleum naphtha. The technic involved was the same with the exception that the solvent used for determining wax in the original muds and in the extracted muds was the same as was being used for making the pilot plant extractions. As various solvents yield different wax values, it was felt that more accurate measurement of extraction efficiencies would be obtained if the same solvent was used for both purposes rather than different solvents.

The results obtained with the two additional types of naphthas are not sufficiently different to warrant extended discussion. A summary of results is given in Table 7 of all the extraction work for the past two years. It can be stated with certainty that petroleum naphthas boiling within the range of about 85° to 120° C. can be used successfully for the extraction of crude wax. They have a distinct advantage over toluene in their lower cost, specific gravity and solvent power toward some of the pigments encountered. Although there did not appear to be any great difference between toluene and the naphthas in regard to the amount of crude wax extracted under

Table 7.—Comparison of Solvents as Crude Wax Extractant.
(75° to 80°C, 2½-hour extraction cycle)

Source of Muds	Toluene				Naptha-Shell 8220, 2220				Benzene			
	No. of runs	Weight charge-Muds	Solvent/ muds	Extraction efficiency	No. of runs	Weight charge-Muds	Solvent/ muds	Extraction efficiency	No. of runs	Weight charge-Muds	Solvent/ muds	Extraction efficiency
		Lbs.		%		Lbs.		%		Lbs.		%
1-1941	31	15.0	10.8	91.1	11	17.7	8.3	91.4	27	17.5	10.0	91.4
2-1941	31	17.3	9.7	85.3	20	19.1	7.6	86.4	6	19.7	8.6	83.9
					Naptha-Skellysolve "C"							
1-1941					23	17.8	7.9	89.7				
	Toluene				Naptha-Shell 8196							
1-1942	16	17.6	9.3	85.8	12	16.7	8.4	84.1				
2-1942	14	18.3	9.1	83.4	4	18.8	7.1	88.0				
3-1942	5	27.2	5.5	82.1	--	--	--	--				
4-1942	8	25.4	6.0	86.0	10	27.8	4.8	88.9				
5-1942	8	44.2	3.5	83.6	3	44.0	3.2	86.7				
6-1941	19	27.9	5.3	82.9	11	27.1	5.0	83.2				
7-1942	--	--	--	--	3	27.7	5.3	87.1				

pilot plant conditions, about 10% more extractables were obtained from muds when toluene was used in comparison with the napthas in the analytical determination of crude wax. It is evident from this that somewhat different constituents are extracted by different solvents. This is partly verified in some experiments dealing with the fractionation of the hard wax with certain solvents which will be discussed later. There is evidence that after continued use the naphthas gradually undergo a change which prevents complete volatilization under the conditions used in the pilot plant operations, with the result that in extreme cases, the hard wax solidifies with a crystalline structure rather than with a uniformly amorphous structure. It seems that the petroleum naphtha which contained aromatic hydrocarbons was worse in this respect than the straight-chain hydrocarbon naphtha. Whether longer steaming of the wax would correct this condition was not determined. The wax is relatively easy to free from either benzene or toluene with live steam in comparison with the petroleum naphthas after they have been in use for some time.

The rate of extracting wax from clarification muds by a given procedure is noticeably affected by the temperature, up to a certain point, at which the extraction is made. Since wax is not very soluble at ordinary temperatures in most solvents that would be used in commercial work, but is soluble in all portions at temperatures above the melting point of the wax, it is obvious that the optimum temperature for extraction should lie close to or above the melting point of the wax. The melting point of crude wax varies with the proportion of fatty matter present but normally it is close to 60° C. In a series of tests, reported in Table 8, where the effect of temperature was determined on muds from a single source using toluene and a petroleum naphtha, it was found that temperatures of 60° or lower were distinctly inferior to temperatures of 70 to 80° C., and that the proportion of wax extracted was not much improved by increasing the temperature above 70° C. for naphtha or above 80° C. for toluene. The amount of wax extracted was not appreciably increased by increasing the time cycle from 2 to 2½ hours, indicating that the shorter period had already exceeded the optimum for the type of mud press cake being extracted.

Table 8.
Effect of Temperature upon Crude Wax Extraction of Mud Press Cake.

Source of Muds	Solvent	Extraction Efficiency* at					Extn. Cycle
		50°C	60°C	70°	80°	90°	
		%	%	%	%	%	hrs.
1-1941	Toluene	81.1	84.9	85.8	88.9	87.6	2½
1-1941	Naptha	86.6	87.7	88.9	90.8	--	2½
		85.6	85.5	90.4	90.3	--	2

*Results expressed on total wax present.

The rate of extracting crude wax from press cake under optimum temperature conditions is governed by the physical condition of the material being extracted. Theoretically most rapid extraction would be obtained from pulverized material but this was not verified because it was not possible to use pulverized material at all satisfactorily in the process that was adopted in the pilot plant. It was demonstrated, however, that porous mud press cake material which contains a large proportion of fibrous matter (intentionally added where the muds are handled with the continuous vacuum filters) offered no appreciable resistance toward extraction. In other words, equilibrium between the solvent and wax was quickly es-

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tablished. Conversely, the lower the fiber content of the mud press cake, the slower was the rate of wax extraction because the particles dried with a rather impervious structure.

The density of the mud press cake also varies with the fiber content. Since cane fiber has a very much lower density than the lime precipitate from the juice clarification process, it is to be expected that the press cake from the vacuum filters would have a much lower density than muds from the old type plate presses. What might be termed normal variations in the density of mud press cake of Louisiana sugar factories after drying may be observed in the data given in Table 7 under the heading of "Weight charge-Muds". In operating the extraction process, the disgester was filled to about the same level each time so that the variation in weight is a measure of the density of the press cake. Calculated from the volume of material put in the digester (not shown in Table) the density ranged from 11 to 32 pounds per cubic foot. This fact will have to be considered in designing a commercial wax-extraction plant.

(To be continued in the May 15th issue of The Sugar Bulletin)

Selective Service Memorandum

At the request of several sugarcane farmers, I have conferred with State Selective Service Headquarters about the reclassification of the 2C and 3C essential men between the ages 18 and 26 who are engaged in the agricultural division of the sugar industry in Louisiana.

As a result of this conference, I now want to advise the sugarcane farmers that it has been established that a great many of the 2C and 3C men who are now being called up for reclassification have been in 2C and 3C a year or more, and the main objective of the present reclassification is to find out if these men are still entitled to a 2C classification.

In view of this, it behooves all employers who have employees now classified in 2C or 3C to provide their local boards with up to date information as to the fact that the registrant is still in his employ and to submit detailed information as to the employee's duties.

Amended regulations whereby no registrant under 26 years old as of March 24, 1944 shall be placed or retained in class 2A or 2B effective April 4, 1944 is not applicable to those in class 2C or 3C. The new DSS form 42A (special) is not required for those registrants engaged in agricultural endeavors.

The purpose of having local boards review all 2C and 3C classifications is to eliminate the class 3C entirely and to place or retain in 2C those registrants whose agricultural services are absolutely essential and such registrant is making a sufficient contribution to the war effort to merit a 2C classification.

In considering those registrants between the ages 18-25 inclusive, the need for his services will be considered, but with full consideration of the extreme need for physically-fit young men in the Armed Forces. Employers should bear this in mind.

Charles A. Farwell, Chairman
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Fallow Flaming Promising as a Means of Controlling Alligator Weed on Sugarcane Lands

By George Arceneaux, Agronomist, and Leo P. Hebert, Junior Agronomist, Division of Sugar Plant Investigations, Bureau of Plant Industry Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture.

The encroachment of Alligator weed (*Alternanthera philoxeroides*) on cultivated areas of the Louisiana Sugarcane District has reached alarming proportions during recent years. Foci of infestation to be found throughout the area have been, on the whole, spreading and increasing in intensity for a number of years. This process is being currently accelerated as a result of curtailments in weeding operations induced by the acute shortage of labor.

The importance of Alligator weed as a source of increased cultivation costs and decreased crop yields in affected areas is widely recognized. Under conditions of light to moderate infestation fairly satisfactory crop yields can ordinarily be secured in spite of the weed growth, but in areas where the weed infestation has reached advanced stages, crop production is possible only at the cost of extensive weeding and, at best, only a fraction of normal yield can be expected. In such cases, numerous weed shoots proceeding from large roots and rhizomes densely permeating the soil to a depth of 12 to 18 inches grow rapidly with resulting stunting of cane plants and suppression of suckers. The following data obtained during 1943 from two areas of apparently similar soil fertility within the same field and planted to the same variety show how yields of cane and sugar can be drastically reduced in extreme cases: Studies conducted on March 11, 1944 have shown that roots and rhizomes occurred at the rate of more than ten tons to the acre in the heavily infested area.

In an experiment on Ranch Plantation near Houma started in the spring of 1943, tests of periodic flaming and other treatments are being conducted on an area showing a uniformly heavy initial infestation of alligator weed. The land was out of cane during the 1943 crop year. Plots intended for the various treatments were flushed-plowed in the spring of 1943. Comparable plots were planted to soybean, in accordance with the prevailing practice. Treatments were applied during the period commencing May 12 and the entire area was plowed on August 3 in preparation for planting. Cane was planted in the usual manner during August.

Alligator weed infestation	Yield of cane per acre	Av. weight per stalk	Indicated yield of 96° sugar	
			Per ton of cane	Per acre
	tons	pounds	pounds	pounds
Extremely heavy	3.36	.77	211.2	710
None	32.79	1.79	212.3	6961

Table 1 summarizes results of studies conducted on March 3, 1944 to determine the persisting infestation within plots on which various treatments were applied in 1943. The weight of roots and rhizomes in each case was determined from excavations made to a depth of 18 inches at a sufficient number of locations within individual plots to ensure a dependable average value.

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In This Issue

Fallow Flaming Promising as a Means of Controlling Alligator Weed on Sugarcane Lands ..... Cover
Sugarcane Wax Studies 1942-1943 (Concluded) 123
1943-44 Wage Rates for Florida Sugarcane.... 127

The quantity of roots and rhizomes found on plots having received the standard treatment (soybean planted on ridges during April and turned under during early August) reflect a condition of very heavy infestation. The average weight per acre of 10,904 pounds does not differ significantly from a comparable determination for the experimental area made in the spring of 1943.

Plots flamed 12 times at weekly intervals during summer months of 1943 showed a greatly reduced infestation as indicated by an average weight of roots and rhizomes per acre of 157 pounds, or only 1.4% of the quantity found on plots where a crop of soybeans had been turned under. Plots flamed 6 times at bi-weekly intervals gave an average yield of 395 pounds of roots and rhizomes or 3.6% of the comparable value for the soybean plots. Other treatments including infrequent flaming, mowing, and a combination of mowing and flaming, while not giving the degree of control realized with frequent flaming, invariably resulted in significantly reduced rates of infestation as compared with the rate maintained in areas where soybeans were turned under. It is interesting to note that in fallow areas where Alligator weed was permitted to grow undistributed in competition with native vegetation and the growth plowed under prior to cane planting, yields of roots and rhizomes dropped to levels below those maintained in the soybean plots.

TABLE 1. Density of root-rhizome infestation of Alligator weed following various treatments

Treatment	Root-rhizome density, March 3, 1944	
	Pounds per acre	Percent of "Standard practice"
Soybean planted during spring 1943 and turned under on August 3	10,904	100.0
Plots fallowed during spring and summer months. (Alligator weed in competition with native vegetation)	8,031	73.7
Plots mowed June 24, July 7, and August 1, 1943	6,434	59.0
Plots mowed June 24, 1943, Flamed July 7, July 13, July 20 and July 30	3,119	28.6
Plots flamed 3 times at monthly intervals during period commencing May 12, 1943.[1]	3,831	35.1
Plots flamed 4 times at tri-weekly intervals during period commencing May 12, 1943	3,266	30.0
Plots flamed 6 times at bi-weekly intervals during period commencing May 12, 1943	395	3.6
Plots flamed 12 times at week'y intervals during period commencing May 12, 1943	157	1.4

[1] Flaming as done in connection with this and other treatments resulted in much more severe killing back of the weed than commonly accomplished with the use of "flame cultivators". The treatment would have unquestionably resulted in severe killing back of cane plants exposed to it and therefore could not be satisfactorily applied to an area where a crop is growing.

Discussion of Results

Of special significance from a standpoint of practical control are results obtained from weekly and bi-weekly flaming during summer months. As mentioned in a previous report,[1] roots and rhizomes of plants so treated showed a greatly reduced concentration of solutes in comparison with those of untreated plants, resulting no doubt from the withdrawal of stored nutrients in the course of recurrent development of new growth without sufficient photosynthesis to compensate for the loss. Information on costs and other practical aspects of this mode of cntrol will have to be obtained before the procedure can be critically evaluated as a plantation practice, but results obtained in these preliminary studies have presented interesting and encouraging possibilities.

The observed decrease in root-rhizome density within plots fallowed without further treatment as compared with levels maintained within plots where soybean was planted and the growth plowed-under

[1] Arceneaux, G., and Hebert, L. P. Preliminary studies of periodic flaming as a means of controlling Johnson grass and Alligator weed on sugarcane lands. Sug. Bull. 22, No. 3, pp. 21-23, Nov. 1, 1943.

is another disclosure considered of practical importance. Soybean does not ordinarily compete very effectively with alligator weed therefore extensive growth of the weed may occur along with the soybean plants. Mature stems of alligator weed turned under with the green manure crop ordinarily germinate, and develop into rhizomes. Large quantities of plant food becoming available from the decomposing soybean plants no doubt contribute to increased growth of the weed and attendant development of underground storage organs during the period between plowing under of the soybean vines and interruption of growth during winter. It is believed that such incidental propagation from the customary plowing under of summer green manure crops grown in infested areas may have contributed materially toward spread of the weed and intensification of its growth during the past.

Sugarcane Wax Studies, 1942-1943
(Concluded)

By R. T. Balch and C. B. Broeg

Removal of the fatty matter from crude wax to yield a hard wax may be accomplished in several ways as stated in previous reports. In this study the results of which are given in Table 9, two solvents were compared quite critically—acetone and 2-butanone (methyl ethyl ketone). The latter solvent is more efficient than acetone in removing the fatty matter and pigments but, it also has a higher solvent power on wax constituents. About 5% more hard wax remains after the treatment with acetone, regardless of whether the crude wax was originally extracted from the mud press cake with toluene or with a petroleum naphtha. It is also interesting to note that a greater yield of hard wax is derived from naphtha-extracted crude wax than from toluene-extracted crude wax when either acetone or 2-butanone is employed for removing the fatty fraction.

These results might lead one to think that the composition of the wax would vary with the solvent used for extracting the crude wax, as well as with the solvent used for separating the fatty matter from the hard wax. This is not borne out in full, however, judging from the results obtained by determining the solubility of the variously produced hard waxes in hot acetone followed by hot ethanol. It is believed that a measure of solubility of the waxes in these solvents is quite indicative of the variations in composition of the hard waxes. The data obtained in this connection are given in Table 10, and it may be noted that there is little difference in the total of the acetone soluble and ethanol-soluble portions of hard waxes found by the use of acetone in comparison with 2-butanone for removing the fatty fraction. However, there is a distinct difference in the total of soluble portions found by the use of toluene compared with petroleum naphtha. The hard wax derived from naphtha-extracted crude wax contains a distinctly smaller proportion of acetone-soluble plus ethanol-soluble matter. This fact would be of particular significance if one attempted to produce a light-colored wax to meet special requirements, because successful isolation of light-colored sugarcane wax appears to be possible only through fractionation of the dark hard wax by means of solvents. In order to obtain the highest yield of light-colored wax, toluene is preferred over petroleum naphtha for extracting the crude wax.

Apparently most of the color of the hard wax remaining after removing the fatty matter which carries most of the chlorophyll and other fat-soluble pigments is associated with the fraction of the hard wax that is insoluble in boiling ethanol alone or in acetone followed by ethanol. This insoluble fraction has such distinctly different properties from the soluble fraction that it must differ materially from the latter in composition. Aside from being extremely dark, it becomes very brittle upon cooling; also it contains most of the ash-forming substance extracted from the crude wax. The presence of this fraction contributes to the hardness and brittleness of the original hard wax. The production of a light-colored wax is dependent upon the removal of this very dark fraction for it appears to be unbleachable by any known method; this is most easily accomplished by means of some solvent to extract the light-colored fraction and leave the dark fraction as an insoluble residue.

Table. 9
Acetone vs. 2-Butanone for Extraction of Fatty Matter from Crude Wax-Percentage of Hard wax on basis of total crude wax.

Source of Wax	Toluene Extracted Crude Wax		Naptha Extracted Crude Wax	
	Acetone	Butanone	Acetone	Butanone
	%	%	%	%
1-1941	79.5	64.7	---	---
1-1942	73.7	62.5	86.3	80.3
2-1942	70.1	69.5	76.1	---
4-1942	71.2	65.2	70.3	65.9
5-1942	75.0	72.9	---	---
6-1941	72.1	72.9	79.1	72.3
Ave.	73.6	68.0	78.0	72.8

In selecting a solvent for effecting this separation, it was desired to find one which would give a maximum yield of the light-colored fraction without dissolving any of the very dark fraction and one from which it would be possible to obtain the wax in a suitably crystalline form for easy separation of the mother liquor for highest purification of the wax. In respect to yield of light-colored wax, best results were obtained from 2-propanol (iso-propyl alcohol) but ethanol almost equalled its performance. Both of these solvents should be anhydrous for best results. The extraction may be easily made by digesting the hard wax, after the removal of the fatty matter, with about 10 times its weight of alcohol under a reflux condenser until equilibrium is established. Stirring aids the operation. Acetone and methanol yielded a lesser quantity of light-colored wax than ethanol, as would be expected. Butanol, ethyl acetate and other solvents that completely dissolve the hard wax, including the undesirable fraction, may be used if their solvent action is lowered with water or some other dilutant. However, none has yet been found to be quite as satisfactory as 2-propanol.

Any chlorophyll that is retained in the hard wax will be extracted with the light-colored fraction by the alcohol. This may be removed from the extracted light-colored wax fraction by treating the alcohol solution with a decolorizing carbon in a customary manner. As already suggested, further refinement of the wax may be effected by allowing the way to crystallize from the decolorized wax solution and removing the mother liquor by filtration or other physical means. Sugarcane wax having a color equal to No. 1 carnauba wax has been obtained by such a method.

It will be observed from Table 10 that the combined acetone and ethanol fraction is about what may

Table 10.—Some Properties of Hard Sugarcane Waxes of Louisiana Origin

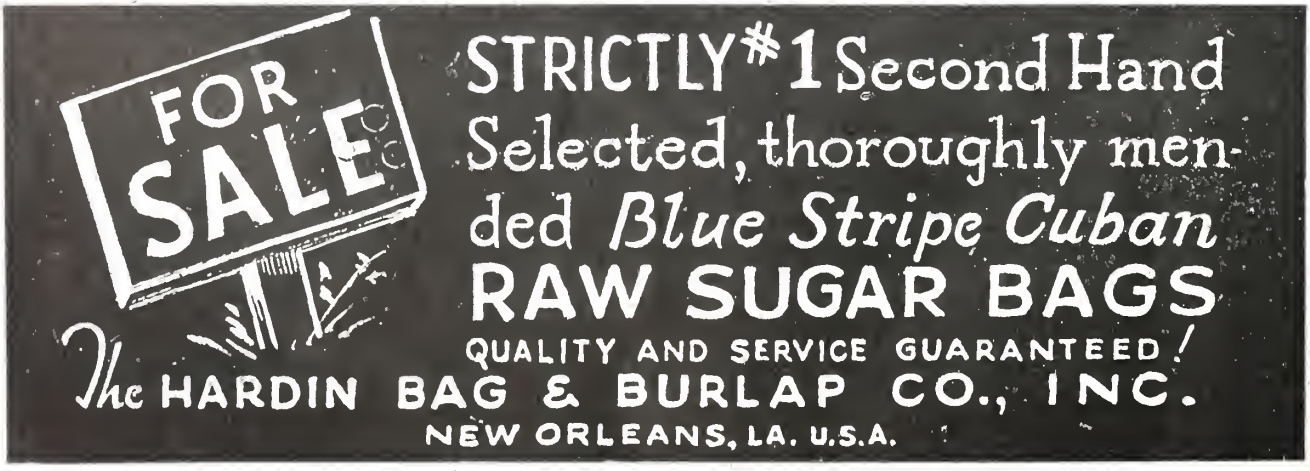
Source of Wax	Solvents for		Hard Wax soluble in-			Colorimeter Readings			Ash	Specific Gravity
	Cr Wax	Fats	Acetone	EtOH*	Total	510	560	610		
			%	%	%				%	
1-1942	Toluene	Acetone	68.2	13.3	81.5	27.6	22.5	22.3	2.39	1.000
	Toluene	Butanone	65.0	13.1	78.1	23.2	17.7	15.6	1.95	
	Naptha	Acetone	58.8	8.5	67.3	22.5	16.9	15.2	1.98	
	Naptha	Butanone	62.0	8.2	70.2	17.4	13.1	12.0	1.60	
2-1942	Toluene	Acetone	63.7	10.5	74.2	18.4	13.8	12.1	2.51	1.011
	Toluene	Butanone	63.2	13.8	77.0	25.2	18.7	16.5	2.40	
	Naptha	Acetone	62.0	11.4	73.4	12.1	9.5	8.7	2.44	
3-1942	Toluene	Acetone	66.7	7.5	74.2	26.1	21.7	23.1	3.97	
4-1942	Toluene	Acetone	68.5	13.5	82.0	20.3	16.8	17.3	2.69	
	Toluene	Butanone	68.8	12.7	81.5	17.0	13.7	13.3	2.18	
	Napthe	Acetone	64.2	11.3	75.5	16.8	12.4	10.7	2.40	
	Naptha	Butanone	60.3	9.9	70.2	12.5	8.6	8.0	1.89	
5-1942	Toluene	Acetone	62.2	12.5	74.7	25.5	20.9	20.6	2.97	0.999
	Toluene	Butanone	69.9	10.0	79.9	21.4	16.7	15.1	2.84	
	Naptha	Acetone	67.1	12.0	79.1	14.3	11.5	11.4	2.85	
6-1941	Toluene	Acetone	66.2	11.4	77.6	21.0	16.7	17.0	1.53	0.996
	Toluene	Butanone	67.7	11.4	79.1	20.7	16.6	16.3	1.58	
	Napthe	Acetone	64.0	8.3	72.3	16.8	12.6	13.2	1.72	
	Naptha	Butanone	60.7	8.5	69.2	16.3	11.4	11.2	1.16	
7-1942	Naptha	Butanone	65.9	6.9	72.8	13.0	10.2	9.8	1.05	
Averages	Toluene	Acetone	65.9	11.4	77.3	23.1	18.7	18.7	2.68	
	Toluene	Butanone	66.9	12.2	79.1	21.5	16.7	15.4	2.19	1.0015
	Naptha	Acetone	63.2	10.3	73.5	16.5	12.6	11.8	2.28	
	Naptha	Butanone	62.2	8.4	70.6	14.8	10.8	10.3	1.43	

* Ethanol extraction followed acetone extraction.

be expected with ethanol or with 2-propanol alone. It may be noted that the yield of light-colored wax, if derived from toluene-extracted crude wax, will average about 78% of the dark hard wax. This applies only to waxes of Louisiana origin, however. Peculiarly, waxes of other origin will not yield such a high proportion of the light-colored fraction nor yield a light-colored wax equaling the Louisiana wax in hardness. Waxes from Cuba, South Africa and South America prepared similarly to the Louisiana waxes have been examined. It may be concluded that the composition of Louisiana wax differs quite appreciably from waxes of other sources even though receiving similar treatment.

In Table 10 are also reported other data regarding properties of hard Louisiana waxes produced under pilot plant conditions. The colorimetric readings of solutions of the various lots of waxes definitely shows that more color is extracted from toluene than with naphtha and that 2-butanone more efficiently removes color than acetone in the process of extracting the fatty fraction from crude wax. The variation in the ash content of the hard wax is due mostly to the variation in the composition of the mud press cake for, on a given sample of muds, crude waxes having practically identical ash contents were obtained with toluene, benzene, petroleum naphtha and carbon tetrachloride. Analysis of the fatty fractions for ash contents shows that 2-butanone extracts a higher proportion of ash forming constituents from crude wax than does acetone. As already stated, the ash is associated with the extremely dark-colored fraction of the hard wax which is insoluble in boiling ethanol; the light colored fraction soluble in ethanol generally contains only about 1/10th the ash of the original hard wax. It has not yet been determined what role the ash plays or how it may be combined. Its proportion can be reduced in the wax by means of an acid treatment but such treatment does not increase the proportion of ethanol-soluble matter. It might be concluded from this that the insolubility of the dark-colored fraction is not dependent upon some sort of combination of the metals and organic acids. About 50% of the ash was found to consist of calcium, iron and aluminum oxides. Some of the iron is certain to be the result of contamination from pilot plant equipment but most of it, as well as the calcium and aluminum, must have found its way into the muds as a result of elmination from the juices in the clarification process.

The specific gravity of hard sugarcane wax as produced by the two solvent method is very close to 1.0. Apparently the ash content influences the specific gravity to some extent as there is a tendency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for waxes of high ash content to have the higher specific gravity.

Some laboratory work has been done toward finding a suitable method of fractionating the fatty matter extracted with acetone or 2-butanone from crude wax for the production of valuable products. The conclusion was reached that the most satisfactory method of handling the product was to hydrolyze the fats in an acetone solution with barium hydroxide, as the first step. Such an operation may well be combined with hard wax production since, if acetone is employed to remove the fatty matter from crude wax, all that needs to be done would be to concentrate the acetone solution of fats to the desired concentration and proceed with the barium hydroxide saponification process. The barium soaps are insoluble in acetone (but not in 2-butanone) and may thus be easily separated from the acetone solution of the liberated alcohols, sterols, hydrocarbons, etc. Recovery of the fatty acids is possible by decomposing the barium soap with a mineral acid. This may be done in either an acetone solution, in which case the barium salt may be recovered in crystalline form (such as barium chloride), or as a water suspension in which case the fatty acids rise to the surface and solidify upon cooling, making their removal possible. Purification of some of the fatty acids may be accomplished by vacuum distillation as is now done commercially. The fate of the chlorophyll that accompanies the barium soap in such a process has not been determined, but it may be possible to recover it from the residues after the fatty acid distillation. Almost quantitative recovery of the sterols is possible by evaporating the acetone solution resulting after the saponification process until the water concentration reaches about 20% (about half the original volume) and then chilling. The crystalline material may be recovered by filtration or other physical means. If the mother liquor is concentrated still further in order to recover the acetone and decrease its concentration in the solution, another product may be obtained. The exact nature of this product has not yet been determined but if any carotene were present in the fatty product, and there is evidence that some is present, it will be concentrated in this fraction unless destroyed by the process used to fractionate the fatty matter.

Uses for Sugarcane Wax

It has long been known that sugarcane wax can be used for a large number of applications replacing, in part or wholly, other commercial waxes. A large number of concerns have tested for various applications the wax resulting from these and previous experiments. As might be expected, opinions as to the value of the wax varied considerably, even in the same fields of applications. Inasmuch as there is a considerable loss of wax involved in obtaining a light-colored wax, the main application of the wax is expected to be in those fields where the dark color of the hard wax would not interfere. It has been demonstrated conclusively by the trade that sugarcane wax can be used successfully and it is believed that a definite market for the wax is awaiting commercial production.

Acknowledgment

The authors wish to express their appreciation of the assistance rendered by the many sugar factory officials in submitting the weekly samples of clarification mud press cake and for the large lots of dried

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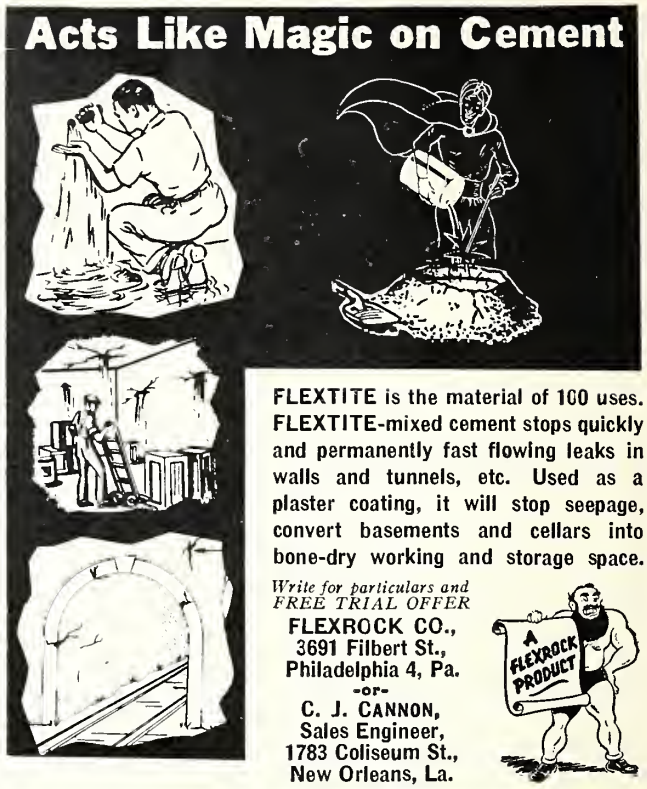

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press cake which were necessary for the extensive pilot plant tests.

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Official Release

1943-44 Wage Rates For Florida Sugarcane

TITLE 7—AGRICULTURE

Chapter VIII—War Food Administration (Sugar Regulations)

Part 802—Sugar Determinations)

Determination of fair and reasonable wage rates for persons employed in the harvesting of sugarcane in Florida during the period September 1, 1943, to June 30, 1944.

Pursuant to Section 301 (b) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued.

§ 802.240 *Fair and reasonable wage rates for persons employed in the harvesting of sugarcane in Florida during the period September* 1, 1943 *to June* 30, 1944. The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met with respect to the harvesting of sugarcane in Florida during the period from September 1, 1943, to June 30, 1944, if all persons employed on the farm during that period in the harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates as agreed upon between the producer and the laborer: *Provided, however*, That the producer shall furnish to the laborer without charge the customary perquisites, such as a habitable house, medical attention, and other customary incidentals, and shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined herein.

(Sec. 301, 50 Stat. 909; 7 U.S.C. 1131; E.G. 9322, 8 F.R. 3807; E.O. 9334, 8 F.R. 5423)

Issued this 19th day of April 1944.

ASHLEY SELLERS,
Assistant War Food Administrator.

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Vol. 22 NEW ORLEANS, LA., JUNE 1, 1944 No. 17

A Bill to Extend the Sugar Act

Mr. O'Mahoney (for himself and Mr. Johnson of Colorado) introduced the following bill, which was read twice and referred to the Committee on Finance.*

To extend, for two additional years, the provisions of the Sugar Act of 1937, as amended, and the taxes with respect to sugar.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That section 513 of the Sugar Act of 1937, as amended (relating to termination of powers of the Secretary of Agriculture under the Sugar Act) is amended to read as follows:

"Sec. 513. The powers vested in the Secretary under this Act shall terminate on December 31, 1946, except that the Secretary shall have power to make payments under title III under programs applicable to the crop year 1946 and previous crop years."

Sec. 2. Section 3508 of Internal Revenue Code (relating to termination of taxes with respect to sugar) is amended to read as follows:

"Sec. 3508. Termination of Taxes.

"No tax shall be imposed under this chapter on the manufacture, use, or importation of sugar after June 30, 1947."

Sec. 3. Section 503 of the Sugar Act of 1937, as amended (relating to payments to the Commonwealth of the Philippine Islands) is amended by striking out "June 30, 1945" and inserting in lieu thereof "June 30, 1947".

---

* The Senate Finance Committee has favorably reported this Bill.

(*Editor's Note*)

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12

Marcel J. Voorhies, Editor

Issued on the 1st and 15th of each month. Official Organ of the American Sugar Cane League of the U. S. A.

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In This Issue

A bill ..... Cover
Western Division Meets 130
WFA Offers to Buy 1944 Crop of Puerto Rican Sugar 131
Summary of Sugar Fertilizer Tests Seasons of 1942 and 1943 131
Zones Lifted for Powdered Confectioners' Sugar 132
Eastern Division Meets 132
Entries of Sugar from Offshore Areas Through April 30, 1944 134
1944 Wage Rates in the Virgin Islands 134
Fertilizer Experiments With Sugarcane 135

Western Division Meets

The meeting of the Louisiana Sugar Producers' Club (Western Division) was held in New Iberia on May 5th, President W. C. Kemper presided.

Those in attendance were:

W. C. Kemper, President, Sterling and Shadyside Factories.
M. V. Yarbrough, Vice-Pres., Youngsville Factory
George L. Billeaud, Billeaud Factory
Harry D. Smedes, Oasis Factory
Leon J. Landry, Iberia Coop.
John M. Caffery, Columbia Factory.
R. Lee Roane, Loisel Factory.
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R. E. Flournoy, Orange Grove Factory.
George M. Germany, Iberia Coop.
J. C. Etheredge, Iberia Coop.
F. G. Blumenthal, Vida Factory.
Paul G. Moresi, Vermilion-Right Way Factories.
Earl Chauffe Ruth Factory.
M. L. Marquette, Oaklawn Factory.
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C. B. Caldwell, Vermilion-Erath Factories.
Jules M. Burguieres, Cypremort Factory.
V. H. Eckard, Vermilion Factory.
W. F. Giles, Adeline, La.
Leon J. Minvielle, New Iberia, La.
Leon Kling, New Iberia, La.
C. B. Gouaux, L. S. U., Baton Rouge, La.
V. P. Mire, Youngsville, La.
P. J. deGravelles, County Agent, St. Mary Parish.
Robert Brown, Louisa, La.
J. C. LeBourgeois, Jr., New Orleans, La.
Hugh Junca, Franklin, La.
Marcel J. Voorhies, New Orleans, La.

A letter from Mr. C. J. Bourg, gratefully acknowledging receipt of a resolution adopted by this group at its last meeting, was read.

By unanimous request of the Club the following letter was dispatched to Dr. Young.

Dr. R. O. Young
Youngsville, La.

Dear Dr.—

Your absence from the first meeting following your retirement as President was regretfully noticed and generally commented upon.

The group in regular meeting requested that I write you and state while it reluctantly accepted your retirement which you persistently urged it did not feel that you were given a mandate to absent yourself from meetings.

The Club, individually and collectively sincerely wants you to know that your presence and guidance have always contributed greatly to its accomplishments and trusts that it shall not be deprived of your invigorating presence at subsequent meetings.

May I state that these are also the personal sentiments of the writer.

With kind personal regards, I am

Very sincerely,
Marcel J. Voorhies,
Sec.-Tres.

The proposed joint luncheon meeting of the Western and Eastern Groups at New Orleans was discussed. Mr. Voorhies was requested to complete arrangements with the Eastern Group. It was suggested that each member be provided with three tickets and advised if they want to take additional guests that they apply for tickets to be provided at an additional cost. It was also suggested that the FARMER members of the Executive Committee

of the American Sugar Cane League be invited as guests of both groups. The time and place of joint meeting to be announced as soon as decided.

Mr. Jules Burguieres discussed the labor shortage and said he was getting information about the use of Jamaican labor from Florida connections.

Mr. Voorhies reported on the conference with the State Agricultural Extension Forces with respect to foreign labor. He advised the group that while the Extension Forces were concentrating on Prisoner of War labor that machinery existed and the County Agents were prepared to assist in securing foreign field labor.

Mr. Voorhies also stated that steps were being taken to determine the probable needs of factory labor, technical, skilled and semi-skilled so that efforts to secure foreign labor could be properly supported.

A raw sugar house with no sugar cane production interests has written a formal letter to the Office of Price Administration setting out the reasons making necessary a higher price on raw sugar.

Dr. A. J. Keller is requested to arrange for the special training of bench-chemists during September instead of June so that the trainees may go directly from the short course to the sugar houses.

Mr. deGravelles stated that every man in C class is being reclassified and can only get a 2C classification which allows a six month deferment. The employer must keep track of the dates of deferments and make further application.

Mr. C. B. Gouaux spoke briefly on varieties. He was asked to be present at the July meeting and be prepared to fully discuss varieties. Dr. Arceneaux of the Federal Station will also be invited.

Meeting adjourned.

Official Release

(WFA Offers to Buy 1944 Crop of Puerto Rican Sugar)

An offer to buy the 1944 crop of Puerto Rican sugar at 3.46 cents per pound, f.o.b. Puerto Rican ports, plus 20 cents per 100 pounds of raw sugar for compliance with specified planting requirements, is being made by the War Food Administration to Puerto Rican producers.

This offer supersedes a proposal announced on March 17 for the purchase of both the 1944 and 1945 crops. The Puerto Rican mills have indicated that they do not wish to make a commitment for the sale of the 1945 crop sugar at this time.

The condition under which the payment of 20 cents per 100 pounds will be made is that 10 percent of the acreage of cane of growers having more than 10 acres shall have been planted to new cane last fall and this spring; and, in the case of growers having 10 acres or less, that 5 percent of the acreage be in new cane. These payments are to be made only on sugar sold to the Commodity Credit Corporation.

The growers still have more than a month in which new plantings can be made under favorable weather conditions.

It is now expected that the Puerto Rican crop will total about 700,000 tons as compared with more than 1 million tons produced in 1943.

Summary of Sugar Fertilizer Tests Seasons of 1942 and 1943

By C. B. Gouaux, M. B. Sturgis and R. K. Walker

Averages of results of sugar cane fertilizer tests for the seasons of 1942 and 1943 are presented in this report. During both seasons the work was conducted in the following parishes: Lafayette, Vermilion, Iberia, St. Martin and St. Mary and in 1942 two tests were also made in the parishes of St. Landry and Assumption.

Plan of Sugar Cane Fertilizer Test

Plot No.	Treatment	Rate Per Acre
1	0–0–0	0
2	12–0–0	225 lbs. Nitrate of Soda
3	12–8–0	345 lbs. : 225 lbs. Nitrate of Soda 120 lbs. Superphosphate
4	0–0–0	0
5	12–0–12	297 lbs. : 225 lbs. Nitrate of Soda 72 lbs. Muriate of Potash
6	12–8–12	417 lbs. : 225 lbs. Nitrate of Soda 120 lbs. Superphosphate 72 lbs. Muriate of Potash
7	0–0–0	0
8	12–0–0	225 lbs. Nitrate of Soda
9	12–8–0	345 lbs. : 225 lbs. Nitrate of Soda 120 lbs. Superphosphate
10	0–0–0	0
11	12–0–12	297 lbs. : 225 lbs. Nitrate of Soda 72 lbs. Muriate of Potash
12	12–8–12	417 lbs. : 225 lbs. Nitrate of Soda 120 lbs. Superphosphate 72 lbs. Muriate of Potash
13	0–0–0	0

* Nitrate of Soda, 16% nitrogen
**Superphosphate, 20% P.O.
***Muriate of Potash, 50% K_2O

RESULTS SEASON OF 1942
(Averages)

Treatment	Tons per Acre	Sucrose	Pounds 96° Sugar		Increase over Check	
			Per Ton	Per Acre	Tons per Acre	Pounds Sugar Acre
(J. W. Wyche, New Iberia. Olivier soil. Co. 290 First Stubble)						
0-0-0 (4 plots)	17.10	13.90	191.4	3273	----	----
12-0-0 (2 plots)	26.35	14.47	200.8	5291	9.25	1918
12-8-0 (2 plots)	25.15	14.51	201.5	5068	8.05	1795
12-0-12 (2 plots)	28.49	14.47	200.8	5721	11.39	2448
12-8-12 (2 plots)	26.16	14.13	194.7	5093	9.06	1820
(Robt. J. Landry, Jeanerette. Olivier soil. Co. 290 First Stubble)						
0-0-0 (5 plots)	21.64	14.07	194.2	4202	----	----
12-0-0 (2 plots)	31.62	14.60	202.9	6416	9.98	2214
12-8-0 (2 plots)	29.97	14.38	199.3	5973	8.33	1771
12-0-12 (2 plots)	32.14	13.88	190.1	6110	10.50	1908
12-8-12 (2 plots)	31.52	14.27	197.5	6225	9.88	2023
(Barradeaux Farm: J. L. Kling, New Iberia. Iberia soil. Co. 290 First Stubble)						
0-0-0 (5 plots)	7.52	11.82	157.9	1187	----	----
12-0-0 (2 plots)	8.95	11.64	155.0	1387	1.43	200
12-8-0 (2 plots)	11.30	11.84	158.1	1788	3.78	601
12-0-12 (2 plots)	9.80	12.03	161.2	1580	2.28	393
12-8-12 (2 plots)	10.01	11.20	148.1	1482	2.49	295
(Caroline: J. L. Kling, New Iberia. Iberia Silty clay. C. P. 29-103 First Stubble)						
0-0-0 (4 plots)	16.90	15.33	215.0	3634	----	----
12-0-0 (2 plots)	20.19	14.52	201.6	4070	3.29	436
12-8-0 (2 plots)	20.79	15.36	215.5	4480	3.89	846
12-0-12 (2 plots)	21.52	14.76	205.6	4425	4.62	791
12-8-12 (2 plots)	23.19	15.52	218.2	5060	6.29	1426
(Jeff Bienvenue, St. Martinville. Iberia soil. Co. 290 First Stubble)						
0-0-0 (5 plots)	14.41	15.62	219.8	3167	----	----
12-0-0 (2 plots)	22.39	15.51	218.1	4883	7.98	1716
12-8-0 (2 plots)	23.12	15.40	216.2	4999	8.71	1832
12-0-12 (2 plots)	21.00	15.09	211.1	4433	6.59	1266
12-8-12 (2 plots)	21.26	15.16	212.2	4511	6.85	1344
(C. Villis Roy, (Naka Plantation) Opelousas. Olivier soil. Co. 290 First Stubble)						
0-0-0 (5 plots)	10.16	12.68	171.6	1743	----	----
12-0-0 (2 plots)	11.96	12.24	164.5	1967	1.80	224
12-8-0 (2 plots)	15.75	12.34	166.1	2674	5.59	931
12-0-12 (2 plots)	13.29	12.53	169.2	2249	3.13	506
12-8-12 (2 plots)	13.15	12.42	167.4	2201	2.99	458
(Andre Ste. Marie, Broussard. Lintonia soil. Co. 290 First Stubble)						
0-0-0 (4 plots)	19.30	12.43	169.2	3266	----	----
12-0-0 (2 plots)	23.02	11.12	146.9	3382	3.72	116
12-8-0 (2 plots)	25.46	11.44	151.9	3868	6.16	602
12-0-12 (2 plots)	25.17	12.41	167.3	4211	5.87	945
12-8-12 (2 plots)	23.66	12.33	166.0	3928	4.36	662

RESULTS SEASON OF 1942—Continued
(Averages)

Treatment	Tons per Acre	Sucrose	Pounds 96° Sugar		Increase over Check	
			Per Ton	Per Acre	Tons per Acre	Pounds Sugar Acre
(Avanelle Landry, Erath. Iberia soil. Co. 290 Plant Cane)						
0-0-0 (4 plots)	27.71	13.55	185.7	5146	----	----
12-0-0 (2 plots)	31.00	11.95	159.9	4957	3.29	189
12-S-0 (2 plots)	31.25	12.32	165.8	5181	3.54	35
12-0-12 (2 plots)	31.67	12.40	167.1	5292	3.96	146
12-S-12 (2 plots)	34.70	12.20	163.9	5687	6.99	541
(Cedar Grove, Labadieville. Yazoo soil. C. P. 29-320 First Stubble)						
0-0-0 (6 plots)	16.16	13.66	187.5	3030	----	----
12-0-0 (2 plots)	16.66	13.70	188.1	3134	0.50	104
12-8-0 (2 plots)	18.85	13.77	189.2	3566	2.69	536
12-0-12 (2 plots)	17.60	14.12	195.0	3432	1.44	402
12-S-12 (2 plots)	19.98	14.27	197.5	3946	3.82	916

RESULTS SEASON OF 1943
(Averages)

Treatment	Tons per Acre	Sucrose	Pounds 96° Sugar		Increase over Check	
			Per Ton	Per Acre	Tons per Acre	Pounds Sugar Acre
(Avanelle Landry, Erath. Iberia soil. Co. 290 First Stubble)						
0-0-0 (4 plots)	19.08	13.40	183	3492	----	----
12-0-0 (2 plots)	20.30	12.00	161	3268	0.22	224
12-8-0 (2 plots)	21.63	13.25	181	3915	2.55	423
12-0-12 (2 plots)	23.38	11.55	154	3601	4.30	209
12-8-12 (2 plots)	27.35	12.15	163	4458	8.27	966
(Andre Ste. Marie, Broussard. Lintonia soil. Co. 290 First Stubble)						
0-0-0 (5 plots)	19.41	14.22	197	3824	----	----
12-0-0 (2 plots)	26.80	14.04	194	5199	7.39	1375
12-8-0 (2 plots)	27.44	14.04	194	5323	8.03	1499
12-0-12 (2 plots)	30.60	13.40	183	5600	11.19	1776
12-8-12 (2 plots)	29.40	13.60	187	5498	9.99	1674
(Smedes, Oasis Plantation, Cade. Lintonia soil. C. P. 29-320 First Stubble)						
0-0-0 (4 plots)	22.66	14.91	208	4713	----	----
12-0-0 (2 plots)	25.45	14.86	207	5268	2.79	555
12-8-0 (2 plots)	23.94	15.00	210	5027	1.28	314
12-0-12 (2 plots)	27.24	14.65	204	5557	4.58	844
12-8-12 (2 plots)	26.13	14.97	209	5461	3.47	748
(Orange Grove, New Iberia. Olivier soil. Co. 290 Plant Cane)						
0-0-0 (5 plots)	23.08	13.54	186	4293	----	----
12-0-0 (2 plots)	23.52	13.34	182	4281	0.44	12
12-8-0 (2 plots)	25.71	13.25	181	4654	2.63	361
12-0-12 (2 plots)	26.87	12.42	167	4487	3.79	194
12-8-12 (2 plots)	27.26	13.17	180	4907	4.18	614
(Caroline Plantation, J. L. Kling, Loreauville. Sarpy soil. C. P. 29-116 First Stubble)						
0-0-0 (5 plots)	26.56	12.36	167	4436	----	----
12-0-0 (2 plots)	34.08	11.98	160	5453	7.52	1017
12-8-0 (2 plots)	32.10	11.86	159	5104	5.54	668
12-0-12 (2 plots)	32.65	12.83	174	5681	6.09	1245
12-8-12 (2 plots)	30.48	12.10	162	4938	3.92	502
(Homer Gonsoulin, Jeanerette. Iberia soil. Co. 290 Plant Cane)						
0-0-0 (6 plots)	31.39	12.80	174	5462	----	----
12-0-0 (2 plots)	36.60	12.08	162	5929	5.21	467
12-8-0 (2 plots)	39.52	12.61	171	6758	8.13	1296
12-0-12 (2 plots)	35.51	12.87	175	6214	4.12	752
12-8-12 (2 plots)	40.93	12.47	168	6876	9.54	1414

ACKNOWLEDGMENTS

Lafayette: S. J. Howles, County Agent, A. J. Brackin, Asst. County Agent.
Vermillion: J. D. Sobert, County Agent.
Iberia: W. E. Williams, County Agent.
St. Martin: Stanley Angelle, County Agent.
St. Landry: Gilbert Martin, County Agent.
Assumption: Moore Valois, County Agent.

O.P.A. Official Release

(Zones Lifted for Powdered Confectioners' Sugar)

Powdered confectioners' sugar in bulk may be sold by refiners in any area without regard to the zones in which their sales of most other sugars are limited, the Office of Price Administration announced May 12th.

The action of removing this powdered confectioners' sugar from the restriction of the sugar zoning order was taken to allow refiners having available capacity to produce this product in excess of the demand in the zones served by them, and to ship it into other territories where the sugar is needed.

The change is also expected to enable bakers, confectioners, other industrial users and institutional users in certain areas to obtain this grade of sugar more promptly than heretofore.

Eastern Division Meets

The regular monthly meeting of the Louisiana Sugar Producers' Club (Eastern Division) was held in Donaldsonville, on May 11th, with President J. T. Landry presiding.

Present were:

J. T. Landry, President, Supreme Factory.
John A. Wilbert, Vice-Pres., Myrtle Grove Factory.
Horace Nelson, Raceland Factory.
W. A. Ralston, South Coast Corp.
John C. Burden, Little Texas Factory.
H. Langdon Laws, Cinclare Factory.
E. W. McNeil, Cinclare Factory.
Emile A. Maier, South Coast Corp.
Samuel B. Pertuit, Raceland Factory.
A. C. Simoneaux, Evan Hall Factory.
C. S. Churchill, Evan Hall Factory.
Bronier Thibaut, Glenwood Factory.
Thomas Bourgeois, Supreme Factory.
A. J. Chenet, Supreme Factory.
A. J. Isacks, Realty Operators.
Francis H. James, Salsburg Factory.
Irvin E. Legendre, Leighton Factory.
Arthur G. Keller, L. S. U., Baton Rouge, La.
E. S. Landry, County Agent, Ascension Parish.
W. M. Grayson, A. A. A., Baton Rouge, La.
Dan Molaisan, Plaquemine, La.
A. J. Keller, Donaldsonville, La.
J. L. V. Granier, Thibodaux, La.
N. L. Price, Thibodaux, La.
Paul G. Borron, Jr., Plaquemine, La.
Marcel J. Voorhies, New Orleans, La.

Dr. Arthur G. Keller, Sugar Engineering School, L.S.U., spoke to the group on the problem of special training for bench chemists. The Western Group requested that the course at L.S.U. be offered in September instead of June so that the trainees might go directly from the special course to the job. Dr. Keller stated that that would be agreeable with L.S.U. and that such a plan would be adopted. He urged the Factories to select their young men and women early. He stated that women, preferably with High School training had proven just as satisfactory as young men. He requested that the Factory operators report on the efficiency of those trained in the special courses so that the courses may be currently adopted to field needs. He stated that two years ago 39 were trained and that last year 19 were trained. Also last year 21 were trained at New Iberia.

Dr. Keller also stated that a shortage of pan-boilers, sugar boilers and effect operators was apparent. He suggested that Factory owners select men and women and arrange with the refiners, the four bone-char and the four vegetable-char refiners to train these people. He feels that in three months time some could be fairly well trained. At that point Mr. McNeil of Cinclare stated that they have had a woman sugar boiler for the past two years and she is very satisfactory. She was trained by her husband who was a sugar boiler.

Dr. Keller further stated that the Louisiana Sugar Industry was faced with the replacement of technical men. The L.S.U. Chemical Engineering School is still turning out a few, but most of them are picked up by other Industries. The Paper Industry, through scholarships, is training young men in several Universities.

At L.S.U. Paper Companies have subsidized the training of young men and pick them right off. The Louisiana Sugar Industry may find itself in the next few years, with no replacements for the older

men who are passing out of the picture. Its a serious Industry problem that deserves real consideration.

Mr. Legendre of Lafourche Sugars stated that his organization developed a welder and a carpenter into sugar boilers and the combination works advantageously to all parties concerned.

Mr. Borron discussed relations with the War Labor Board. There is very little flexibility in wage rates. Mr. Borron wanted to know from the factories if securing a lee-way in wages would in any way relieve the factories in securing and keeping their men. Of course with the low frozen price of sugar it is out of the question for the sugar factories to attempt to compete with War Industries. But a little latitude might be helpful. Where a wage range exists for a given job, increases for meritorious service can be made up to the ceiling of the range or 10 cents per hour which ever is smaller. And the average meritorious increases must not exceed 5 cents per hour. And when meritorious increases are given the records must be kept according to General Order #31.

Mr. Grayson reported that the applications for conditional payments are being processed and that payments should begin in about three weeks.

Mr. Burden of Little Texas reported on the use of flame weeders. He said they were using three types including two sulky types, adaptable to either mule or tractor power. He said that they are very satisfactory. He thinks that their development will make as large a contribution to cultivating as the mechanical harvester will do for harvesting.

The Secretary was requested to invite Dr. George Arceneaux of the Federal Station and Mr. Gouaux of L.S.U. to attend the July meeting to discuss varieties.

NOTICE

Tune in on Radio Station WWL, New Orleans, Louisiana, at **5.05 to 5:15 P. M., THURSDAY, JUNE 8th,** for an interesting interview, on sugar, of Dr. Robert C. Hockett, Scientific Director Sugar Research Foundation by Dr. Walter H. Eddy, Professor Emeritus, Bio-Chemistry, Columbia University, New York, N. Y.

Dr. Hockett is on a leave of absence from Massuchusetts Institute of Technology, where he is Associate Professor of Organic Chemistry, while serving as Scientific Director of the Sugar Research Foundation.

Be sure to listen to this interesting and enlightening radio program on sugar.

(*The Editor.*)

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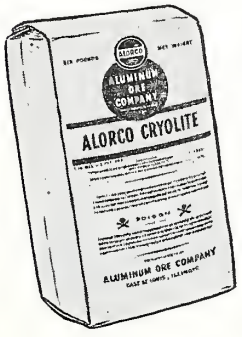

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Official Release

(Entries of Sugar from Offshore Areas Through April 30, 1944)

The War Food Administration reports that the quantity of sugar entered for consumption from all offshore areas during January-April amounted to 1,580,233 short tons, raw value. For the corresponding period last year the quantity entered totaled 1,320,772 tons. The figures are subject to change after final outrun weights and polarization data for all entries are available.

A total of 169,146 short tons of sugar, raw value, was marketed by the mainland cane area and 251,342 tons by the continental beet area during January-March 1944, as compared with 95,607 tons and 341,125 tons, respectively, during the same period of 1943.

Direct-Consumption Sugar

Direct-consumption sugar is included in the foregoing quantities shown as entered through April 30:

Area	Quantity entered through April 30
	(short tons—96° equivalent)
Cuba	1,083,166
Hawaii	198,580
Puerto Rico	246,193
Foreign Countries other than Cuba	52,294
Total	1,580,233

Entries from Full-Duty Countries

Area	Quantity entered through April 30		
	Sugar Polarizing 99.8° and above	Sugar Polarizing less than 99.8°	Total
	(short tons, 96° equivalent)		
Cuba	93,701	4,615	98,316
Puerto Rico	3,897	6,622	10,519
Hawaii	0	0	0
Total	97,598	11,237	108,835

Area	Quantity entered through April 30[1]
	(pounds)
Dominican Republic	68,770,547
Dutch East Indies	1,310,451
Haiti	32,014,303
Martinique	2,493,408
Total	104,588,709
Tons	52,294

[1] Excluding the first 20,000 pounds entered from each area. Under the quota provisions of the sugar Act of 1937 such sugar is quota-exempt, and although these provisions are in suspension at this time, tbese deductions continue to be made in order to keep entry figures on a basis comparable with those of previous years.

Official Release

(1944 Wage Rates in the Virgin Islands)

Determination of Fair and Reasonable Wage Rates for Persons Employed in the Production, Cultivation or Harvesting of Sugarcane in the Virgin Islands During the Calendar Year 1944

Pursuant to the provisions of subsection (b) of section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Fair and reasonable wage rates for persons employed in the production, cultivation, or harvesting of sugarcane in the Virgin Islands during 1944. The requirements of section 301 (b) of the Sugar Act of 1937, as amended, shall be deemed to have been met in the Virgin Islands during the calendar year 1944 if all persons employed on the farm during that period in the production, cultivation, or harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates not less than the following:

(a) *Time rates.* Per day of 8 hours, $1.36. For a working day longer or shorter than 8 hours the rate shall be the hourly equivalent of the day rate.

(b) *Piece rates.* Persons employed on a piece rate basis shall be paid at rates which will result in earnings of not less than the day or hourly rate as provided in paragraph (a).

(c) *General provisions.*. (1) The producers shall furnish the laborer, without charge, the perquisites customarily furnished by him, such as a dwelling, garden plot, pasture lot, and medical services.

(2) The producer shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined above.

(3) Nothing in this determination shall be construed to mean that a producer may qualify for a payment under the said act who had not paid in full the amount agreed upon between the producer and the laborer.

Issued this 2nd day of March, 1944.

WILSON COWEN,
Assistant War Food Administrator.

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Fertilizer Experiments With Sugarcane

By B. G. Gouaux, M. B. Sturgis and R. K. Walker

Soil fertility studies, published in *Proc. Soil Sci. Amer.* 6:344-347, 1941, have shown that the soils on the Mississippi terraces within the sugarcane area are variable in their contents of nutrient constituents. The variations are high within soils of the same series as well as between soils of different series. This indicates that several different fertilizers would be required to judiciously fertilize sugar cane in the area.

A summary of results from field experiments at 15 different locations are given in the following table. It can be seen from the results that the 12-8-12 (or 9-6-9) was the most widely adapted fertilizer used. This was followed in order as given by 12-0-12 (or 10-0-10), 12-8-0 and nitrogen only. The experiments have not been conducted long enough or extensively enough to be fully conclusive. They do show, however, that profitable results could be expected from the application of 400 pounds per acre 9-6-9 fertilizer where the available soil phosphorus and potassium are low, from the application of 400 pounds of 10-0-10 where the available potassium is low, from the application of 300-400 pounds of 12-8-0 or 10-6-4 where the available phosphorus is low and from the application of 36-40 pounds of nitrogen in any of the common carriers where the available soil phosphorus and potassium are not deficient.

The levels of the availability of phosphorus and potassium may be estimated for individual fields by sending correctly taken soil samples from each field to the Louisiana State University Soils Laboratory for analysis and recommendations.

Summary of Fertilizer Tests on Sugar Cane for 1942 and 1943 on Mississippi Terrace Soils

Location	Soil Type	Year and Age of planting	Pounds Sugar per acre with no fertilizer	Pounds Sugar per acre with 36 lbs. of nitrogen	Pounds Sugar per acre with 300 lbs. best adapted mixed fertilizer used	Best adapted fertilizer used
J. W. Wyche, New Iberia	Olivier silt loam	1942 First Stubble	3273	5291	5721	12-0-12
R. J. Landry, Jeanerette	Olivier silt loam	1942 First Stubble	4202	6416	6225	Nitrogen
C. Willis Roy, Opelousas	Olivier silt loam	1942 First Stubble	1743	1967	2674	12-8-0
Orange Grove, New Iberia	Olivier silt loam	1943 Plant Cane	4293	4281	4907	12-8-12
A. Ste Marie, Broussard	Lintonia silt loam	1942 First Stubble	3266	3382	4211	12-0-12
Oasis, Cade	Lintonia silt loam	1943 First Stubble	4713	5268	5557	12-0-12
A. Ste Marie, Broussard	Lintonia silt loam	1943 First Stubble	3824	5199	5600	12-0-12
Avanelle Landry, Erath	Iberia silt loam	1942 Plant Cane	5146	4957	5687	12-8-12
J. L. King, New Iberia	Iberia silt loam	1942 First Stubble	1187	1387	1788	12-8-0
Jeff Bienvenue, St. Martinville	Iberia silt loam	1942 First Stubble	3167	4883	4999	12-8-0
Caroline, New Iberia	Iberia silty clay	1942 First Stubble	3634	4070	5060	12-8-12
Avanelle Landry, Erath	Iberia silt loam	1943 First Stubble	3492	3268	4458	12-8-12
H. Gonsoulin, Jeanerette	Iberia silt loam	1943 Plant cane	5462	5929	6876	12-8-12
J. L. King, Loreauville	Yazoo silty clay loam	1943 First Stubble	4436	5453	5681	12-0-12
Cedar Grove, Labadieville	Yazoo silt loam	1942 First Stubble	3030	3134	3946	12-8-12

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TABLE OF CONTENTS

	Pages
Washington Notes—by C. J. Bourg	138
Notice of Meeting	138
A.A.A. Cropland-Proportionate Share Planted Acres 1939-1942 (Table)	139
A.A.A. Proportionate Share Acreage Harvested for Sugar 1939-1942 (Table)	139
A.A.A. Final Manufacturing Report of Louisiana Sugar Mills 1934-1943 (Table)	139
Hot Water Treatment of Sugarcane—by P. H. Dunckelman and C. W. Edgerton	140-144
Disease Testing and Initial Seedling Selection Work at the Houma Station during 1943—by E. V. Abbott and Eaton M. Summers	144-148
The Role of Red Rot in the Windrowing for Seed of Present Day Sugarcane Varieties in Louisiana—by I. L. Forbes, P. J. Mills, and P. H. Dunckelman	148-149
Costs and Returns On Small Family Sized Sugarcane Farms In 1938, 1940 and 1942—by J. Norman Efferson	149-150
Some Effects Of Trash In Cane On Milling Results—by George Arceneaux and Lester G. Davidson	151-158
Results Of Sugarcane Variety Tests In Louisiana During 1943—by George Arceneaux, L. P. Hebert, and C. C. Krumbhaar	159-165
Sugarcane Test Field Report Season Of 1943—by C. B. Gouaux	166-170
Louisiana Production Report 1935-1943 (Table)	170

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Marcel J. Voorhies, Editor

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Geo. M. Murrell, Bayou Goula, La.
Louis Robichaux, New Orleans, La.
L. A. Borne, Raceland, La.

IMPORTANT MEETINGS

Mr. W. F. Giles, Chairman of the Grower-Processor Committee, and Mr. Frank L. Barker, Chairman of the Labor Committee of the American Sugar Cane League, are calling meetings of their respective Committees for 10 A. M., Tuesday, June 20, in the County Agricultural Building in Thibodaux, Louisiana.

The Grower-Processor Committee will consider evidence to be presented at the public hearing scheduled for June 29 on Fair Price Determination (Grower-Processor contract covering the sale and purchase of sugarcane for sugar) for the crop year 1944.

The Labor Committee will consider evidence to be presented at the same public hearing on wages for harvesting the 1944 crop and wages for cultivating the 1945 crop.

All interested sugarcane farmers are urgently requested to be present to impart their views to the Committee members.

Washington Notes

By C. J. Bourg

The House of Representatives has adopted a resolution extending the Sugar Act for two years. It was decided by representatives of the various areas and branches of the domestic sugar industry that no amendments to the Sugar Act should be offered at this time because they would probably lead to controversy considered undesirable in war time. Also, the fact that the quotas are in suspension for the duration of the emergency, no changes with respect to quotas would be effective. The conditions at the time of the declaration of peace will better determine what changes are desirable in the quota provisions. Two years is considered a reasonable period, before the end of which it is the hope of everyone that the war will be over and the plans for the future of the sugar industry may be more intelligently formulated. From the standpoint of the State Department and the War Food Administration the simple extension of the Sugar Act was recommended. The representatives of the sugar industry considered it best not to do anything that might be misunderstood during war time, realizing that propaganda and political strategy by the enemy is sometimes used as effectively as military strategy. Frankly the wisdom of cooperation during these times is apparent. With respect to the price of sugar, that is now under the definite control of the Office of Price Administration which has established price ceilings. The Commodity Credit Corporation has supplemented the price control by offering incentives to sugarcane and sugar beet growers. The incentive to be paid by the Commodity Credit Corporation on the 1945 crop is expected to be announced during the month of June and the final determination as to the amount of the incentive to be paid on the 1944 crop is still under consideration and a decision will undoubtedly be made simultaneously with respect to both 1944 and 1945.

Committee to Report

The Sub-Committee on Priorities under the Chairmanship of Mr. Will J. Gibbens, Jr., will have a comprehensive report on means and methods of securing materials for maintenance and repairs. This should prove of interest to Processors and Sugarcane Farmers, so look for this report in the July 1st *Sugar Bulletin*.

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CROPLAND—PROPORTIONATE SHARE—PLANTED ACRES OF LOUISIANA SUGARCANE FARMS PARTICIPATING IN THE SUGAR PROGRAM (SUGAR ACT OF 1937) BY PARISHES, FROM A. A. A. REPORTS

PARISHES	Cropland (Acres)				Proportionate Shares (Acres)				Total Planted (Acres)			
	1939	1940	1941	1942	1939	1940	1941	1942	1939	1940	1941	1942
Acadia												
Ascension	34,729.6	34,688.2	30,747.7	28,886	11,782.7	11,547.3	11,299.7	10,984	10,147.8	10,834.8	10,146.5	10,984
Assumption	47,213.6	46,413.0	43,796.1	44,285	22,788.4	17,557.5	21,639.2	26,279	23,837.4	22,482.6	22,501.3	26,321
Avoyelles	17,196.2	15,099.8	15,852.1	15,617	3,148.7	3,692.0	3,862.9	3,529	2,780.7	3,298.8	3,279.4	3,653
E. Baton Rouge	3,861.9	2,913.6	1,211.4	1,106	804.1	588.6	486.9	400	624.6	393.3	351.4	401
Evangeline	786.5	95.7	85.5	52	65.0	25.0	24.7	5	29.5	11.9	12.4	5
Iberia	84,587.3	84,663.9	83,773.6	79,151	29,606.7	30,277.7	31,621.5	34,266	31,116.9	31,148.2	31,683.7	35,333
Iberville	53,439.6	50,724.2	52,378.9	49,317	21,310.1	20,428.4	22,491.3	23,554	21,439.6	21,174.2	21,341.0	23,698
Jefferson	461.8	182.7		112	125.5	54.0		29	102.7	38.6		29
Lafayette	62,228.9	52,236.5	44,114.7	44,413	16,701.9	13,693.9	14,360.8	11,856	13,521.0	11,539.0	11,073.4	12,035
Lafourche	52,527.1	52,912.4	68,355.5	53,260	18,848.5	19,199.7	20,535.6	24,218	18,662.0	19,634.3	19,825.0	24,218
Plaquemine	239.0				82.8				86.1			
Pointe Coupee	54,642.7	53,288.2	57,905.9	50,585	16,149.2	15,479.8	15,452.5	12,981	12,948.9	12,179.5	12,179.8	12,987
Rapides	19,936.3	16,643.6	18,451.2	17,557	2,903.0	2,564.2	2,853.3	2,188	2,507.5	2,225.3	2,276.8	2,459
St. Bernard											1,850.5	
St. Charles	7,084.0	6,039.1	5,642.2	4,756	2,876.9	2,328.0	2,280.6	1,867	2,557.9	2,023.0		1,867
St. James	33,293.0	32,467.1	32,222.6	32,832	11,578.7	11,595.7	11,922.5	13,297	11,398.1	11,542.6	11,832.3	13,297
St. John	28,090.0	28,036.5	27,498.9	27,603	12,405.2	11,744.0	13,023.8	14,288	12,520.6	13,138.8	13,328.4	14,653
St. Landry	20,137.0	18,536.5	12,743.0	13,313	2,884.8	2,914.3	2,402.0	2,001	2,218.5	2,258.4	1,759.3	2,015
St. Martin	64,619.1	68,732.2	58,171.5	57,746	21,784.9	20,375.8	20,899.6	17,288	17,497.9	15,310.4	16,358.3	18,124
St. Mary	57,756.8	57,029.2	55,970.4	58,033	24,473.9	22,486.9	25,512.8	30,565	26,541.0	25,918.1	25,898.5	30,673
Terrebonne	67,023.2	65,268.3	62,764.9	59,734	27,922.0	29,287.0	30,586.2	34,413	28,013.2	31,364.9	30,997.5	34,815
Vermilion	67,469.7	63,225.5	47,839.8	45,560	13,575.9	12,820.5	12,150.9	10,547	11,320.2	10,480.5	9,973.9	10,987
W. Baton Rouge	32,690.3	31,723.3	32,839.2	31,332	14,409.0	13,159.2	14,935.7	15,745	14,166.3	14,468.1	14,144.4	15,748
W. Feliciana	9,775.6	9,775.6	9,775.6	13,047	2,713.1	3,282.8	3,282.9	4,299	3,578.3	3,631.3	3,353.8	4,330
TOTAL	819,789.2	790,695.1	762,140.7	728,297	278,941.0	265,102.3	281,625.4	294,599	267,616.7	265,116.6	264,167.6	298,632

PROPORTIONATE SHARES ACRES HARVESTED FOR SUGAR—YIELD OF SUGARCANE PER ACRE AND YIELD OF RECOVERABLE SUGAR PER ACRE OF LOUISIANA FARMERS PARTICIPATING IN THE SUGAR PROGRAM (SUGAR ACT OF 1937) BY PARISHES FROM A. A. A. REPORTS

PARISHES	Proportionate Shares Harvested for Sugar (Acres)				Yield of Cane Per Acre Tons				Yield of Recoverable Sugar per Acre CWT			
	1939	1940	1941	1942	1939	1940	1941	1942	1939	1940	1941	1942
Acadia												
Ascension	9,116.7	8,256.1	8,808.9	10,141	19.58	12.48	14.8	16.93	31.99	19.78	23.65	26.29
Assumption	19,856.7	14,388.2	19,140.9	24,105	24.92	17.13	19.5	18.99	42.69	28.50	32.37	32.93
Avoyelles	2,325.3	2,347.8	2,799.3	3,245	22.93	15.91	17.5	16.71	38.25	23.91	30.14	29.28
E. Baton Rouge	564.3	339.6	326.1	380	18.36	12.15	14.9	13.83	30.48	20.18	23.23	23.66
Evangeline	26.5	10.4	12.4	5	16.03	6.29	7.5	5.22	28.35	10.15	12.54	9.15
Iberia	25,748.1	23,982.3	25,995.9	31,052	22.06	13.21	15.5	17.09	37.15	21.55	25.83	30.04
Iberville	19,073.2	15,521.6	17,910.8	21,159	22.93	14.96	18.4	18.34	39.22	24.92	29.50	31.43
Jefferson	93.8	34.0		26	7.85	8.64		14.17	14.18	13.58		23.89
Lafayette	12,399.1	8,427.5	9,022.2	10,276	16.79	10.54	14.4	13.77	28.06	18.24	23.76	25.03
Lafourche	17,292.5	16,064.0	17,653.7	22,454	23.38	15.49	20.2	16.68	39.97	25.29	33.34	28.69
Plaquemine	68.3				7.02				13.02			
Pointe Coupee	11,760.2	9,626.1	10,459.7	11,782	20.54	13.43	16.6	19.01	34.60	21.63	26.42	32.05
Rapides	2,320.0	1,646.8	1,910.8	2,050	21.15	16.98	19.3	18.97	35.13	26.76	31.57	33.61
St. Bernard												
St. Charles	2,343.9	1,613.1	1,616.4	1,691	15.67	11.85	15.8	14.76	26.48	18.88	25.79	25.83
St. James	10,302.5	9,777.7	10,338.7	12,423	21.25	12.61	15.3	17.06	36.49	20.54	25.54	29.30
St. John	10,984.1	9,734.3	11,311.5	13,046	22.73	13.98	17.5	19.43	40.66	23.15	29.61	33.35
St. Landry	1,984.9	1,372.7	1,494.2	1,913	19.21	12.18	17.8	17.31	31.41	19.38	28.04	27.99
St. Martin	15,658.1	11,899.5	13,676.6	15,795	18.29	13.02	15.8	15.86	29.99	21.33	25.56	26.99
St. Mary	22,178.7	18,536.7	21,917.4	28,049	18.97	14.89	19.0	18.71	39.25	23.81	31.64	32.79
Terrebonne	24,914.3	23,895.0	26,200.4	31,490	21.36	14.17	18.0	17.26	36.47	22.55	29.11	28.98
Vermilion	9,998.3	7,028.5	7,721.1	9,542	20.97	10.00	16.4	15.69	33.69	16.29	27.86	26.94
W. Baton Rouge	12,685.8	10,487.8	12,428.0	14,400	20.96	14.11	17.4	18.25	36.07	23.39	28.86	31.42
West Feliciana	2,622.2	2,557.0	3,022.9	4,044	26.59	16.23	21.7	19.84	45.71	24.81	33.79	33.15
TOTAL	234,317.5	197,546.7	223,767.9	269,068	21.23	13.97	17.4	17.55	36.66	22.74	28.71	30.14

RECAPITULATION OF FINAL MANUFACTURING REPORTS OF LOUISIANA SUGAR MILLS (CROPS 1934-1943) A. A. A. Records

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
Crop Days	58.0	68.6	80.0	80.06	73.30	63.82	39.85	52.35	65.2	82.33
Time Lost % of total time	16.49	15.89	18.61	20.81	13.43	13.00	15.91	19.63	19.49	24.87
Cane Tons Ground	3,163,901	4,182,715	4,941,235	5,240,675	5,858,871	5,083,657	2,923,204	3,946,699	4,734,321	5,388,245
% of Total Cane Ground	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Tons Ground per Hour	38.83	42.17	51.98	50.75	53.38	56.10	54.25	55.83	55.27	55.84
Extraction N. J. % Cane	72.64	72.63	75.51	74.69	75.61	75.66	75.16	75.39	74.41	74.87
Sucrose Extraction	90.37	90.71	91.26	91.32	91.44	91.74	91.30	91.74	91.14	90.93
Saturation % Cane	18.26	16.39	14.77	14.479	16.10	15.78	15.00	15.66	17.71	17.07
Fibre % Cane	14.92	13.92	13.22	12.36	13.66	13.57	13.06	13.38	13.99	13.86
Java Ratio	75.39	77.54	78.63	77.51	78.71	78.23	78.19	78.14	77.63	78.17
Analyses										
Crusher Juice Brix	16.04	16.42	16.11	15.86	16.59	16.75	15.81	16.27	16.83	16.77
Brix Factor (Final Report)	97.05	97.08	92.27	97.47	97.35	97.25	97.22	97.30	97.21	97.08
Sucrose Factor (Final Report)	93.62	94.50	94.87	94.91	95.20	94.89	94.98	95.07	95.06	94.94
Normal Juice Brix	15.58	15.94	15.67	15.42	16.15	16.29	15.37	15.83	16.36	16.28
Normal Juice Sucrose	12.22	12.46	11.84	11.76	12.50	12.63	11.93	12.14	12.70	12.39
Normal Juice Purity	78.36	78.17	75.56	76.26	77.40	75.53	77.62	76.69	77.63	76.10
Factory Sirup Brix	57.06	57.56	59.23	58.33	58.88	59.24	58.52	58.68	57.91	58.53
Bagasse:—% Sucrose	3.17	3.07	3.09	2.92	3.06	3.04	3.07	2.93	3.07	3.11
Bagasse:—% Moisture	48.53	47.95	47.97	48.38	47.69	47.69	48.94	48.64	49.00	49.09
Bagasse:—% Fiber	47.35	47.69	47.86	47.53	47.44	47.88	46.95	47.56	46.81	46.67
Press Cake, Sucrose	5.12	5.47	5.25	5.08	4.76	4.45	3.93	3.78	4.24	4.14
Residual Juice Brix		6.57	6.20	6.29	6.13	6.22	5.84	5.88	5.93	6.03
Sucrose Balance										
Sucrose in Molasses % Cane	0.920	0.864	0.930	1.004	1.022	0.964	0.969	0.961	0.945	1.067
Sucrose in Press Cake % Cane	0.090	0.082	0.096	0.111	0.097	0.082	0.082	0.078	0.081	0.081
Sucrose in Undetermined % Cane	0.150	0.135	0.201	0.201	0.220	0.179	0.141	0.183	0.198	0.253
Sucrose in Bagasse % Cane	0.950	0.944	0.858	0.848	0.994	0.860	0.854	0.824	0.919	0.925
Sucrose Total Losses % Cane	2.110	2.025	2.085	2.224	2.225	2.085	2.046	2.046	2.143	2.326
Sucrose Sugars % Cane	7.750	8.121	7.729	7.412	8.110	8.328	7.775	7.933	8.229	7.875
Total Sucrose % Cane	9.860	10.146	9.814	9.635	10.335	10.413	9.821	9.979	10.372	10.201
Average Rolls per Tandem	------	8.82	9.13	10.78	10.01	10.12	10.24	10.51	10.50	10.50
Average Crushers per Tandem	------	0.89	1.03	0.88	0.92	0.92	0.94	0.97	0.97	0.97
Average Knives per Tandem	------	0.89	0.90	0.99	0.95	0.92	0.96	1.04	1.04	1.04
Lbs. 96° Sugar M&E T/C	153.22	168.66	160.993	154.391	168.96	173.68	161.98	165.28	171.44	164.06
Gals. Final Molasses M&E T/C	5.6	5.94	6.520	6.57	6.48	6.64	6.28	6.69	6.59	7.16
Boiling House Efficiency	98.56	99.77	99.290	95.281	97.16	98.68	98.00	98.69	98.29	97.10

Report to Contact Committee

Report on Cooperative tests With the Hot Water Treatment of Sugarcane Department of Plant Pathology

P. H. Dunckelman and C. W. Edgerton

January, 1944

Introduction: Field tests on various plantations throughout the sugar belt to determine the effect of treating seed cane with hot water at 52° C. were continued through 1943. At present results on tests for three years are available and cane has been planted for tests for the fourth year. It will be desirable to have these tests run through at least five years.

Experimental Methods: The procedure followed in 1943 was, with very few exceptions, the same as in previous years. A cover crop of soybeans, with or without corn, was turned under to decompose in advance of the first planting. Plantings were made in August, September, October, and November. All plantings were made as near to the first of the month as possible. Two varieties of cane were used at each plantation, and with one exception*, four replications were made on both treated and check plots of each variety at each planting, thus averaging 16 plots per unit, or a total of 64 plots per test field when all plantings were completed in November. Each plot was approximately 1/80 of an acre.

The treating procedure was essentially the same at all locations and consisted of submerging the cane in water heated to 52° Centrigrade for a period of 20 minutes. Both treated and check plots were planted two running stalks with a lap of 10 to 20 inches. The cane was covered by either disc cultivators or turning plows. All test fields were cultivated in the regular manner.

Stand counts were obtained in the fall and in the spring to determine whether the treatment injured or stimulated the buds.

In the harvest operations the cane on each small plot was weighed and the plot was considered as a separate unit. The weights and comparative differences of treated and checked plots, which are recorded in the tables in this report, represent averages of four such plots. In every case, except in the stubble plot at Cinclare, where the cane was cut "clean" or stripped with the knives, and in both stubble and plant cane at Albania, where the cane was burned clean of trash and shucks after being cut, all cane in all of the small plots was weighed "dirty" or with the shucks. Weighing in this manner naturally caused the tonnage per acre to run somewhat higher, but the comparative weights of the plots are unaffected.

Effect of Hot Water Treatment on Germination: The results of the stand counts made in the spring are presented in Table 1. A study of this table will show that in general, the buds germinated more rapidly and better stands were present on the treated plots in both fall and spring. This agrees with the results obtained in previous years.

Effect of Hot Water Treatment on Yields: The results obtained from the stubble cane test fields planted in the fall of 1941, are recorded in Tables 2 to 5. No data on stubble were obtained in the Meeker and Lower Terrebonne tests. The results on the plant cane test fields, planted in the fall of 1942, are given in Tables 6 to 9. No data on the plant cane at Billeaud Plantation were obtained. A summation of the effects of the hot water treatment on both stubble and plant cane of the variety C. P. 29/320 in 1943 is given in Tables 10 and 11, and for three years in Table 12.

*In the stubble plots (1941 plantings) at Billeaud Plantation, only 2 replications were made in the October and November plantings.

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TABLE 1—Effect of the Hot Water Treatment on the Germination of Seed Cane in 1942-43 tests as Revealed by Stand Counts.

Plantation	Date of Planting (1942)	Date of Count (1943)	Spring (1943) Stand Count for the 1942 Plant Cane (Counts Based on Four 1/80 Acre Plots)											
			CP 29-320		CP 28-19		CP 29-103		Co. 281		CP 29-116		CP 29-120	
			Check	Treated	Check	Treated	Check	Treated	Check	Treated	Check	Treated	Check	Treated
Westover	Aug. 8	April 22	1274	1622	1213	1008								
	Sept. 2	April 22	458	761	325	883								
	Sept. 28	April 22	636	968	369	770								
	Nov. 5	April 22	282	512	446	479								
Raceland	Aug. 15	April 21	1091	1196	582	1026								
	Sept. 5	April 21	896	1112	813	1017								
	Oct. 6	April 21	451	745	371	543								
	Nov. 12	April 21	367	472	349	603								
Montegut	Aug. 11	April 21	1007	1118	1092	1336								
	Sept. 4	April 21	1106	1247	1390	1717								
	Oct. 5	April 21	288	427	384	614								
	Nov. 12	April 21	236	277	368	580								
Meeker	Aug. 28	April 19	945	1439	1458	1804								
	Sept. 25	April 19	284	496	375	566								
	Oct. 9	April 19	207	291	281	429								
	Nov. 14	April 19	249	546	460	538								
Glenwood	Aug. 18	April 22	152	130	175	170								
	Sept. 8	April 22	619	669	652	830								
	Oct. 8	April 22	252	488	210	575								
	Nov. 6	April 22	330	510	378	464								
Albania	Aug. 10	April 21	1003	706			1141	1446						
	Sept. 9	April 21	359	517			454	477						
	Oct. 3	April 21	641	856			383	780						
	Nov. 10	April 21	211	495			186	743						
Greenwood	Aug. 14	April 21	604	795			656	726						
	Sept. 7	April 21	901	879			567	845						
	Oct. 14	April 21	375	544			280	583						
	Nov. 7	April 21	352	582			339	633						
Cinclare	Aug. 19	April 19	373	437					242	162				
	Aug. 31	April 19	1075	1403					879	878				
	Sept. 28	April 19	576	703					442	544				
	Nov. 5	April 19	343	527					400	602				
Billeaud	Aug. 17	April 20									1506	2233	800	1309
	Sept. 2	April 20									967	1027	500	567
	Oct. 2	April 20									733	697	531	626
	Nov. 10	April 20									434	428	242	488

TABLE 2—Effect of the Hot Water Treatment on Tonnage of First Year Stubble at Albania and Billeaud. 1941-43. Yields in Tons per Acre

Albania

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	Co. 290	Check	26.52	
	Co. 290	Treated	25.70	—0.82
	CP 29-320	Check	21.68	
	CP 29-320	Treated	21.32	—0.36
September	Co. 290	Check	24.68	
	Co. 290	Treated	22.64	—2.04
	CP 29-320	Check	21.74	
	CP 29-320	Treated	22.20	+0.46
October	Co. 290	Check	23.42	
	Co. 290	Treated	23.74	+0.32
	CP 29-320	Check	24.38	
	CP 29-320	Treated	23.74	—0.64
November	Co. 290	Check	23.08	
	Co. 290	Treated	24.84	+1.76
	CP 29-320	Check	22.72	
	CP 29-320	Treated	25.52	+2.80

Billeaud

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 29-116	Check	28.28	
	CP 29-116	Treated	26.52	—1.76
	CP 29-320	Check	16.74	
	CP 29-320	Treated	20.86	+4.12
September	CP 29-116	Check	34.24	
	CP 29-116	Treated	34.38	+0.14
	CP 29-320	Check	20.96	
	CP 29-320	Treated	23.66	+2.70
October	CP 29-116	Check	18.86	
	CP 29-116	Treated	18.30	—0.56
	CP 29-320	Check	14.40	
	CP 29-320	Treated	12.20	—2.20
November	CP 29-116	Check	17.06	
	CP 29-116	Treated	9.60	—7.46
	CP 29-320	Check	9.58	
	CP 29-320	Treated	12.32	+2.74

TABLE 3—Effect of the Hot Water Treatment on Tonnage of First Year Stubble at Cinclare and Glenwood. 1941-43. Yields in Tons per Acre

Cinclare

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	Co. 281	Check	6.24	
	Co. 281	Treated	4.38	—1.86
	CP 29-320	Check	8.80	
	CP 29-320	Treated	11.12	+2.32
September	Co. 281	Check	4.62	
	Co. 281	Treated	7.80	+3.18
	CP 29-320	Check	13.68	
	CP 29-320	Treated	17.80	+4.12
October	Co. 281	Check	11.36	
	Co. 281	Treated	12.74	+1.38
	CP 29-320	Check	21.96	
	CP 29-320	Treated	16.92	—5.04
November	Co. 281	Check	10.60	
	Co. 281	Treated	11.24	+0.64
	CP 29-320	Check	19.74	
	CP 29-320	Treated	24.26	+4.52

Glenwood

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	18.14	
	CP 28-19	Treated	18.12	—0.02
	CP 29-320	Check	17.84	
	CP 29-320	Treated	19.56	+1.72
September	CP 28-19	Check	19.86	
	CP 28-19	Treated	22.64	+2.78
	CP 29-320	Check	21.44	
	CP 29-320	Treated	22.64	+1.20
October	CP 28-19	Check	16.12	
	CP 28-19	Treated	16.18	+0.06
	CP 29-320	Check	21.98	
	CP 29-320	Treated	24.24	+2.26
November	CP 28-19	Check	13.66	
	CP 28-19	Treated	15.70	+2.04
	CP 29-320	Check	24.10	
	CP 29-320	Treated	23.42	—0.68

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TABLE 4—Effect of the Hot Water Treatment on Tonnage on First Year Stubble at Greenwood and Raceland. 1941-43. Yields in Tons per Acre

Greenwood

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	26.22	
	CP 28-19	Treated	28.80	+2.58
	CP 29-320	Check	27.68	
	CP 29-320	Treated	27.84	+0.16
September	CP 28-19	Check	22.04	
	CP 28-19	Treated	24.58	+2.54
	CP 29-320	Check	26.40	
	CP 29-320	Treated	26.14	—0.26
October	CP 28-19	Check	29.34	
	CP 28-19	Treated	32.16	+2.82
	CP 29-320	Check	31.06	
	CP 29-320	Treated	31.56	+0.50
November	CP 28-19	Check	26.10	
	CP 28-19	Treated	28.34	+2.24
	CP 29-320	Check	30.78	
	CP 29-320	Treated	35.28	+4.50

Raceland

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	25.20	
	CP 28-19	Treated	24.60	—0.60
	CP 29-320	Check	29.46	
	CP 29-320	Treated	30.74	+1.28
September	CP 28-19	Check	30.70	
	CP 28-19	Treated	29.00	—1.70
	CP 29-320	Check	29.24	
	CP 29-320	Treated	31.26	+2.02
October	CP 28-19	Check	23.42	
	CP 28-19	Treated	32.12	+8.70
	CP 29-320	Check	30.96	
	CP 29-320	Treated	31.70	+0.74
November	CP 28-19	Check	29.62	
	CP 28-19	Treated	32.16	+2.54
	CP 29-320	Check	28.84	
	CP 29-320	Treated	34.04	+5.20

TABLE 5—Effect of the Hot Water Treatment on First Year Stubble at Westover. 1941-43. Yields in Tons per Acre

Westover

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	31.74	
	CP 28-19	Treated	29.10	—2.64
	CP 29-320	Check	34.40	
	CP 29-320	Treated	34.96	+0.56
September	CP 28-19	Check	25.24	
	CP 28-19	Treated	22.84	—2.40
	CP 29-320	Check	36.44	
	CP 29-320	Treated	37.28	+0.84
October	CP 28-19	Check	24.04	
	CP 28-19	Treated	27.22	+3.18
	CP 29-320	Check	24.78	
	CP 29-320	Treated	33.58	+8.80
November	CP 28-19	Check	19.32	
	CP 28-19	Treated	22.36	+3.04
	CP 29-320	Check	30.00	
	CP 29-320	Treated	31.58	+1.58

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TABLE 6—Effect of the Hot Water Treatment on Tonnage of Plant Cane at Albania and Cinclare. 1942-43. Yields in Tons per Acre

Albania

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 29-103	Check	29.58	
	CP 29-103	Treated	27.76	—1.82
	CP 29-320	Check	21.74	
	CP 29-320	Treated	19.02	—2.72
September	CP 29-103	Check	24.00	
	CP 29-103	Treated	23.60	—0.40
	CP 29-320	Check	15.14	
	CP 29-320	Treated	17.48	+2.34
October	CP 29-103	Check	21.58	
	CP 29-103	Treated	27.38	+5.80
	CP 29-320	Check	21.02	
	CP 29-320	Treated	23.52	+2.50
November	CP 29-103	Check	17.40	
	CP 29-103	Treated	29.46	+12.06
	CP 29-320	Check	9.66	
	CP 29-320	Treated	17.76	+8.10

Cinclare

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	Co. 281	Check	6.94	
	Co. 281	Treated	4.34	—2.60
	CP 29-320	Check	14.52	
	CP 29-320	Treated	16.80	+2.28
September	Co. 281	Check	20.62	
	Co. 281	Treated	20.56	—0.06
	CP 29-320	Check	28.16	
	CP 29-320	Treated	30.78	+2.62
October	Co. 281	Check	19.82	
	Co. 281	Treated	19.42	—0.40
	CP 29-320	Check	24.88	
	CP 29-320	Treated	26.18	+1.30
November	Co. 281	Check	15.80	
	Co. 281	Treated	18.22	+2.42
	CP 29-320	Check	22.36	
	CP 29-320	Treated	27.64	+5.28

TABLE 7—Effect of the Hot Water Treatment on Tonnage of Plant Cane at Glenwood and Greenwood. 1942-43. Yields in Tons per Acre

Glenwood

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	18.82	
	CP 28-19	Treated	20.38	+1.56
	CP 29-320	Check	24.80	
	CP 29-320	Treated	26.64	+1.84
September	CP 28-19	Check	22.06	
	CP 28-19	Treated	22.66	+0.60
	CP 29-320	Check	26.66	
	CP 29-320	Treated	31.44	+4.78
October	CP 28-19	Check	10.70	
	CP 28-19	Treated	17.72	+7.02
	CP 29-320	Check	23.38	
	CP 29-320	Treated	28.74	+5.36
November	CP 28-19	Check	21.60	
	CP 28-19	Treated	25.14	+3.54
	CP 29-320	Check	25.78	
	CP 29-320	Treated	32.56	+6.78

Greenwood

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 29-103	Check	41.22	
	CP 29-103	Treated	40.92	—0.30
	CP 29-320	Check	32.24	
	CP 29-320	Treated	35.76	+3.52
September	CP 29-103	Check	37.34	
	CP 29-103	Treated	39.54	+2.20
	CP 29-320	Check	34.76	
	CP 29-320	Treated	33.72	—1.04
October	CP 29-103	Check	34.12	
	CP 29-103	Treated	40.32	+6.20
	CP 29-320	Check	32.24	
	CP 29-320	Treated	38.40	+6.16
November	CP 29-103	Check	36.36	
	CP 29-103	Treated	43.00	+6.64
	CP 29-320	Check	31.70	
	CP 29-320	Treated	35.87	+4.17

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TABLE 8—Effect of the Hot Water Treatment on Tonnage of Plant Cane at Lower Terrebonne and Meeker. 1942-43. Yields in Tons per Acre

Lower Terrebonne

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	21.74	
	CP 28-19	Treated	22.98	+1.24
	CP 29-320	Check	32.60	
	CP 29-320	Treated	31.14	—1.46
September	CP 28-19	Check	27.30	
	CP 28-19	Treated	27.70	+0.40
	CP 29-320	Check	34.36	
	CP 29-320	Treated	34.56	+0.20
October	CP 28-19	Check	14.10	
	CP 28-19	Treated	17.48	+3.38
	CP 29-320	Check	20.72	
	CP 29-320	Treated	26.18	+5.46
November	CP 29-19	Check	16.44	
	CP 28-19	Treated	18.44	+2.00
	CP 29-320	Check	17.30	
	CP 29-320	Treated	18.14	+0.84

Meeker

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	35.88	
	CP 28-19	Treated	35.26	—0.62
	CP 29-320	Check	40.14	
	CP 29-320	Treated	42.88	+2.74
September	CP 28-19	Check	30.26	
	CP 28-19	Treated	31.70	+1.44
	CP 29-320	Check	31.14	
	CP 29-320	Treated	35.60	+4.46
October	CP 28-19	Check	31.50	
	CP 28-19	Treated	31.26	—0.24
	CP 29-320	Check	26.16	
	CP 29-320	Treated	29.10	+2.94
November	CP 28-19	Check	39.46	
	CP 28-19	Treated	42.32	+2.86
	CP 29-320	Check	36.34	
	CP 29-320	Treated	38.48	+2.14

TABLE 9—Effect of the Hot Water Treatment on Tonnage of Plant Cane at Raceland and Westover. 1942-43. Yields in Tons per Acre

Raceland

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	21.78	
	CP 28-19	Treated	25.92	+4.14
	CP 29-320	Check	31.08	
	CP 29-320	Treated	32.16	+1.08
September	CP 28-19	Check	27.62	
	CP 28-19	Treated	30.54	+2.92
	CP 29-320	Check	28.12	
	CP 29-320	Treated	35.13	+7.01
October	CP 28-19	Check	19.40	
	CP 28-19	Treated	24.20	+4.80
	CP 29-320	Check	27.34	
	CP 29-320	Treated	29.76	+2.42
November	CP 28-19	Check	18.08	
	CP 28-19	Treated	26.48	+8.40
	CP 29-320	Check	23.22	
	CP 29-320	Treated	28.14	+4.92

Westover

Date of Planting	Variety	Treatment	Tons per acre	Differences
August	CP 28-19	Check	22.62	
	CP 28-19	Treated	22.64	—0.58
	CP 29-320	Check	31.84	
	CP 29-320	Treated	32.24	+0.40
September	CP 28-19	Check	12.16	
	CP 28-19	Treated	21.26	+9.10
	CP 29-320	Check	21.32	
	CP 29-320	Treated	29.34	+8.02
October	CP 28-19	Check	24.54	
	CP 28-19	Treated	26.16	+1.62
	CP 29-320	Check	35.16	
	CP 29-320	Treated	36.54	+1.38
November	CP 28-19	Check	22.78	
	CP 28-19	Treated	22.20	—0.58
	CP 29-320	Check	30.20	
	CP 29-320	Treated	32.98	+2.78

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TABLE 10—Summation of the Effect of the Hot Water Treatment on Tonnage of First Year Stubble. 1941-43. (Variety CP 29-320). Yields in Tons per Acre.

Plantation	August Planting		September Planting		October Planting		November Planting	
	Treated	Check	Treated	Check	Treated	Check	Treated	Check
Albania	21.32	21.68	22.20	21.74	23.74	24.38	25.52	22.72
Billeaud	20.86	16.74	23.66	20.96	12.20	14.40	12.32	9.58
Cinclare	11.12	8.80	17.80	13.68	16.92	21.96	24.26	19.74
Glenwood	19.56	17.84	22.64	21.44	24.24	21.98	23.42	24.10
Greenwood	27.84	27.68	26.14	26.40	31.56	31.06	35.28	30.78
Raceland	30.74	29.46	31.26	29.24	31.70	30.96	34.04	28.84
Westover	34.96	34.40	37.28	36.44	33.58	24.78	31.58	30.00
Average	23.77	22.37	25.85	24.27	24.85	24.22	26.63	23.68

TABLE 11—Summation of the Effect of the Hot Water Treatment on Tonnage of Plant Cane. 1942-43. (Variety CP 29-320) Yields in Tons per Acre.

Plantation	August Planting		September Planting		October Planting		November Planting	
	Treated	Check	Treated	Check	Treated	Check	Treated	Check
Albania	19.02	21.74	17.48	15.14	23.52	21.02	17.76	9.66
Cinclare	16.80	14.52	30.78	28.16	26.18	24.88	27.64	22.36
Glenwood	26.64	24.80	31.44	26.66	28.74	23.38	32.56	25.78
Greenwood	35.76	32.24	33.72	34.76	38.40	32.24	35.87	31.70
Lower Terrebonne	31.14	32.60	34.56	34.36	26.18	20.72	18.14	17.30
Meeker	42.88	40.14	35.60	31.14	29.10	26.16	38.48	36.34
Raceland	32.16	31.08	35.13	28.12	29.76	27.34	28.14	23.22
Westover	32.24	31.84	29.34	21.32	36.54	35.16	32.98	30.20
Average	29.58	28.62	31.00	27.46	29.80	26.36	28.95	24.57

TABLE 12—Increase or Decrease in Yield from Treatment (Tons). (Variety CP 29-320). 1941-42-43.

Plantation	Date of Planting	Year			Average
		1941	1942	1943	
Albania	Aug.	4.27	3.87	—2.72	1.81
	Sept.	2.94	2.56	2.34	2.61
	Oct.	5.85	1.28	2.50	3.21
	Nov.	1.72	9.42	8.10	6.41
Billeaud	Aug.	4.89	1.22		3.05
	Sept.	4.17	3.87		4.02
	Oct.	5.73	3.36		4.54
	Nov.	7.02	—4.60		1.21
Cinclare	Aug.	—2.35	—5.78	2.28	—1.95
	Sept.	0.90	2.15	2.62	1.89
	Oct.	2.36	—6.72	1.30	—1.02
	Nov.	—6.78	5.27	5.28	1.26
Glenwood	Aug.	—2.29	—1.39	1.84	—0.61
	Sept.	2.01	1.01	4.78	2.60
	Oct.	2.59	2.73	5.36	3.56
	Nov.	5.36	2.04	6.78	4.73
Greenwood	Aug.		—1.20	3.52	1.16
	Sept.	2.54	1.36	—1.04	0.95
	Oct.	0.87	2.42	6.16	3.15
	Nov.	5.72	4.73	4.17	4.87
Lower Terrebonne	Aug.	—4.13	1.49	—1.46	—1.37
	Sept.	1.20	4.07	0.20	1.82
	Oct.	4.97	5.18	5.46	5.20
	Nov.	—1.05	0.43	0.84	0.07
Meeker	Aug.	—2.30	2.58	2.74	1.01
	Sept.	13.22	2.82	4.46	6.83
	Oct.	7.00	5.71	2.94	5.22
	Nov.	7.04	—1.50	2.14	2.56
Raceland	Aug.	3.23	—1.87	1.08	0.81
	Sept.	5.16	—2.29	7.01	3.29
	Oct.	4.19	2.10	2.42	2.90
	Nov.	2.21	3.45	4.92	3.53
Westover	Aug.	0.02	—1.09	0.40	—0.22
	Sept.	3.04	1.51	8.02	4.19
	Oct.	—0.22	2.20	1.38	1.12
	Nov.	5.55	4.65	2.78	4.33

Average Yield Increases per Acre from Treatment for three-year Period on Nine Plantations (Variety CP 29-320)

August	September	October	November
0.41 tons	3.13 tons	3.10 tons	3.22 tons

Evaluation of Tests: The results presented in this paper generally indicate, as we have found in the past, that greater yields of sugarcane are obtained as a consequence of treating the seed for a period of 20 minutes in water heated to 52° Centigrade.

In a summation of the effect of the hot water treatment on tonnage of first year stubble of the variety CP 29-320 at seven locations during the period 1941-43, the following results, as shown in Table 9, were obtained: (1) In the August plantings the treated

plots averaged 1.40 tons per acre more than the non-treated. (2) In Sept., the treated plots yielded 1:58 ton more per acre than the check plots. (3) The October hot water-treated plots yielded 0.63 tons per acre more than the checks, and (4) the November treated plots yielded 2.95 tons per acre more than the check plots.

Table 10 gives a summation of the effect of the hot water treatment on tonnage of plant cane, at eight locations, of the variety CP 29-320 in the period 1942-43. Increases of 0.96 T., 3.54 T., 3.44 T., and 4.38 tons of cane per acre are evident in the August, September, October, and November plantings, respectively.

Other varieties showing comparable increases in yield as a result of the hot water treatment include CP 28-19 and CP 29-103.

As shown in the text, satisfactory increases have been obtained over a period of three years, from 1941 up to the present time.

Disease Testing and Initial Seedling Selection Work at the Houma Station During 1943

By E. V. Abbott, Pathologist, and Eaton M. Summers, Associate Pathologist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture, Houma, Louisiana.

Testing of new seedling varieties for disease resistance and adaptability to Louisiana conditions was continued on a large scale at Houma during 1943. Approximately 13,000 seedlings from the 1942 breeding season were germinated from true seed received from the cane breeder, nearly 10,000 of which survived the mosaic inoculation test in the greenhouse and were transplanted to the field. An additional 500 varieties of the same breeding series were received as cuttings from the Canal Point station. A summary of the numbers studied in different categories is presented in table 1.

TABLE 1—Summary of disease resistance tests of sugarcane varieties at the Houma Station during 1943.

Classification of Varieties	Number examined in the field	Number analyzed for sucrose	Number inoculated with red rot	Number inoculated with mosaic	Number replanted as candidates C. P.	New C. P. numbers assigned
C. P. candidates*	4,740	2,266	1,549	499	493	75
Single stool progenies from commercial crosses**:						
'41 series	13,018	2,757	------	------	1,495	------
'42 series	9,787	------	------	13,098	------	------
Imported and Parent Varieties	138	16	55	66	8	------
Agronomic selections	1,249	22	------	27	------	------
Totals	28,932	5,061	1,604	13,690	1,996	75

* Varieties that have passed preliminary disease-resistance and other tests and have advanced to the state of being considered for assignment of C. P. numbers.

** Seedlings grown from true seed at Houma, and existing only as the original, single stool.

Progress and Problems

The procedure followed at the Houma station in testing large seeding progenies for disease resistance and selecting the individuals that are to be assigned C. P. numbers, has been described in some detail in previous articles published in *The Sugar Bulletin*[1]. When the procedure for assigning C. P. numbers to new seedlings was revised in 1935 so that the assignment was made at Houma after two years of disease-resistance tests and selection of desirable types under Louisiana conditions instead of at the breeding station in Florida, as was done formerly, three problems appeared to be the most important among those to be solved: (1) to obtain a satisfactory substitute for Co. 281 for windrowing; (2) to obtain earlier-maturing varieties adapted to heavy and mixed soils; and (3) to replace C. P. 28/19 with an equally early-maturing cane of better type and less expensive to harvest. In each, the question of disease resistance was an important consideration.

These somewhat specialized needs of the industry were in themselves an indication that progress had been made since the beginning of the varietal improvement program undertaken by the three cooperating agencies about a decade earlier, during the early years of which the cry was for any cane that would grow and produce a reasonable yield of sugar, with less emphasis on specialized requirements.

Progress in the realization of the first of these objectives has been made with the release of C. P. 34/120, the first variety to be released that received a C. P. number under the revised procedure. That it is not the complete solution of the windrowing variety problem is recognized; yet, as Lauritzen has pointed out[2], C. P. 34/120 will yield more sugar per acre than Co. 281 when windrowed, in spite of a slightly higher rate of inversion of sucrose. It is a distinct improvement over that variety in resistance to mosaic and root rot, two of the principal causes of low yields of Co. 281. Unfortunately, however, it is less resistant to red rot than is Co. 281, and it is far more susceptible to chlorotic streak. Thus, gains in resistance to mosaic and root rot which will result from the extensive replacement of the Co. 281 with C. P. 34/120, may be partially counterbalanced by the greater susceptibility of the latter to other diseases.

C. P. 34/120 has proved to be adapted to heavy soils[3], and expansion of it on such soils, will contribute toward the realization of the second objective mentioned above. Where C. P. 34/120 is grown on heavy soils, particular attention should be given to keeping seed supplies free of chlorotic streak since the disease is usually more prevalent on such soils. In common with most other varieties, yields of C. P. 34/120 are markedly reduced from planting chlorotic-streak-infected seed, and every effort should be made to keep this very valuable variety as free of infection as possible.

C. P. 34/120 may also be used to a limited extent for early milling. Under some conditions, however, it matures only a little better than Co. 281[3] and can not be considered a reliable substitute for C. P. 28/19 under most conditions. The replacement of C. P. 28/19 with a vigorous, disease-resistant and equally early cane of good type, remains a difficult problem. This is because of the rarity of high sucrose itself, and the additional fact that the majority of seedings with high sucrose are either low in vigor, of

[1] Abbott, E. V., and Summers, Eaton M. Disease testing and initial selection work at the Houma station during 1940 and 1941. Sugar Bulletin 20 (18):137-141, 1941.

Summers, Eaton M., and Abbott, E. V. Disease testing and initial seedling selection work at the Houma Station during 1942. Sugar Bulletin 21 (18):156-158, 1943.

[2] Lauritzen, John I. Windrowing qualities of C. P. 34/120 and certain other commercial varieties of sugarcane in Louisiana. Sugar Bulletin 21(23): 200-202, 1943.

[3] Arceneaux, George, Hebert, L. P., and Krumbhaar, C. C. Results of sugarcane variety tests in Louisiana during 1942. Sugar Bulletin 21(18): 147-151, 1943.

poor type, or are susceptible to one or more of the major diseases. Of the 276 seedlings assigned C. P. numbers since the present practice of basing this assignment on the result of 2 years' tests, i. e., as both plant cane and stubbles, was begun in 1939, 31 varieties, or 11.2 percent of the total, have had up to the time of assignment, an average sucrose content equivalent to the average of C. P. 28/19 in the same tests. Of the 175 that were assigned prior to 1942, and that have thus had a chance to be considered by the agronomists for introduction at the test fields, 8 have been so selected. In the agronomy tests through 1942, only 1 of the 8, C. P. 36/62, had maintained an average sucrose level equivalent to the average of C. P. 28/19 in the same tests, although the highest analyses for the others were within the range of analyses of C. P. 28/19. It is thus apparent that very few seedlings have the primary requisite necessary for consideration as a substitute for C. P. 28/19.

C. P. 36/62 stubbles so poorly it is probably out of the question as a commercial cane. The other 7 varieties with high sucrose that have been sent to the test fields have not been consistent enough in this respect to be considered as replacements for C. P. 28/19 from this standpoint. It is possible, of course, that some of them might yield as much sugar per acre early in the season as C. P. 28/19, and if they were less expensive to harvest and had no other disqualifying characteristics, they might be acceptable substitutes. Everything considered, however, the immediate prospect of replacing C. P. 28/19 with a variety equally as early maturing and as good or better in other respects, are not bright. C. P. 33/425, which was released in 1943 as an early-milling cane for the northern section of the sugar district, probably will not be widely grown. F. 31/962, which usually has a higher sucrose content than C. P. 28/19, does not possess the vigor or stubbling qualities to make it dependable under all conditions. C. P. 33/253, which in agronomic tests has usually equalled and often exceeded C. P. 28/19 in yields of sugar per acre, can be used to supplement this variety on muck soils where mosaic spread is not a problem. Growing it elsewhere in the sugar district would require roguing to control this disease.

It is evident from the preceding discussion that C. P. 34/120 is a cane of wide adaptability. It is anticipated that partial or complete replacement of some of the other commercial varieties with it will result in sufficient increases in yield of cane to cause a further upward trend in the state average yield curve. However, the gains may be relatively smaller than those that followed the discarding of the P. O. J. varieties. From what is known at present about the unreleased varieties now at the test fields, it seems probable there are few that are outstanding in as many respects as C. P. 34/120, although there are undoubtedly some that are superior to it in one way or another. The general picture with respect to new varieties indicates that future advances in varietal improvement will be gradual and less spectacular than they have been at some times in the past. This is because of the present sounder position of the industry with respect to varieties, and the consequent higher standards that must be met before a cane is approved for release, rather than because of any lower quality of the unreleased varieties now being tested. The average equality of the unreleased varieties is, in fact, undoubtedly higher

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Expectancy of spectacular gains through the release of new varieties is also tempered by the experience of the past 10 years, during which the average yields of cane per acre in Louisiana have not improved to the extent that had been hoped when the P. O. J. varieties were replaced. Periods of exceptionally unfavorable weather in some years have reduced yields below the normal expectancy. There has also been increasing disease damage to certain varieties, accentuated in some instances by the unfavorable weather, but doubtless brought about also by the increase of specialized forms or races of the organisms which cause the diseases. Labor shortages, resulting at times in inability to cultivate adequately, and causing losses of cane at harvest time, have also contributed toward holding yields below the levels that might have been anticipated.

The presence of chlorotic streak in the State further complicates the problem of breeding varieties that are resistant to all of the important diseases. C. P. 34/120, which is resistant to mosaic but susceptible to chlorotic streak, illustrates this. All of the 11 C. P. varieties that have been released to growers are resistant to mosaic, but 7 are susceptible to chlorotic streak; while of 15 mosaic-resistant, unreleased varieties that have been promising enough to reach an advanced stage of agronomic testing, 11 are susceptible to chlorotic streak.

While there is every reason to believe that progress will continue to be made in improving the varieties available to Louisiana growers, it is evident that they should make every effort to obtain the maximum results with those they now have. Much has been written and said about the value of disease and insect control and of good farming in maintaining and improving yields. The importance of these things that lie within the realm of what the grower himself can do, can not be overestimated.

Occurrence of Mosaic in Resistant Released Varieties

The occurrence of more than the usual amount of mosaic in 4 released varieties considered resistant to this disease, was noted in 1943. On one plantation in St. Charles Parish upwards of 80 per cent infection was found in 75 acres of C. P. 28/11 stubble. While traces of mosaic are not uncommon in this variety, nothing approaching this high infection has been recorded before. It is probable that this resulted from increase of the disease through the use of infected seed cane, together with some secondary spread, over a period of years, rather than from the appearance of a strain of the mosaic virus to which C. P. 28/11 is highly susceptible.

On the same plantation, approximately 8 percent mosaic infection was found in a field of plant cane of C. P. 33/243, also considered resistant to mosaic, but in which traces of a severe type are found. On one plantation in Lafourche Parish, numerous stools of mosaic were found in C. P. 34/120 plant cane and stubble. Prior to this, only rare cases of mosaic had been found in this variety.

An average of 20 percent mosaic was found in 35 to 40 acres of plant cane of C. P. 28/19 on a plantation in Lafourche Parish. This was traced to a gradual building up of the disease by the use of infected seed cane for several years. More than about 1 per cent infection is unusual in this variety.

These instances emphasize the importance of annual inspection of fields of all varieties that are to be used for seed in order to avoid the unfortunate choice

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of those that may have chance mosaic or chlorotic streak infection. Often the mere selection of certain fields or portions of them is all that is necessary to obtain seed cane that is free or nearly free of disease, whereas the neglect of this precaution may result in inadvertently increasing the disease to a damaging extent within a few years.

Collections of the mosaic from all 4 varieties are being studied in the greenhouse to determine whether they represent strains of the virus hitherto unidentified in the State, and further field observations will be made in 1944.

Unreleased Test Field Varieties

At the meeting of the Contact Committee held at New Iberia in June, 1943, 4 unreleased varieties were designated for increase at the test field and secondary increase stations as follows: C. P. 34/92, 5 acres; C. P. 34/115, 3 acres; C. P. 34/139, 5 acres, and C. P. 36/105, 5 acres. Presumably these are considered by the agronomists as the most promising of the unreleased varieties that have been extensively tested.

All of these varieties are resistant to mosaic. Occasional mosaic stools have been found in C. P. 34/92, C. P. 34/115 and C. P. 36/105 in test field plantings of the Houma Station, but thus far there is no indication the disease would be of importance in them if they were grown commercially.

C. P. 36/105 is the only one of the four that is rated as resistant to red rot. C P. 34/92 and C. P. 34/139 have proved susceptible in laboratory inoculation tests, and C. P. 34/115 very susceptible. While in test field plantings of the 3 susceptible varieties red rot has not caused any important loss of stands thus far, it is possible that trouble would eventually be encountered if they were grown commercially.

All four varieties have been rated as resistant to root rot. C. P. 34/92 is susceptible to chlorotic streak (about equal to C. P. 29/320), and C. P. 34/139 is very susceptible, having shown approximately 30 per cent greater secondary spread of the disease in field tests than C. P. 29/320. Moderate percentages of the disease have been found in C. P. 34/115. The reaction of C. P. 36/105 to chlorotic streak has not been determined.

Imported Varieties

Since the establishment of the federal station at Houma, testing of varieties from foreign countries and possessions of the United States for disease resistance and adaptability to Louisiana conditions has been an important activity of the station. In addition to determining the value of these canes for commercial cultivation, an object of the work has been to provide the cane breeder with information regarding the disease resistance and other qualities of these canes that would be of assistance to him in choosing varieties suitable for use as parents in the breeding program.

Well known to Louisiana growers are the results of the earliest years of this work when, through the cooperative efforts of the American Sugar Cane League, the Louisiana Experiment Station, and the U. S. Department of Agriculture, the 4 P. O. J. varieties, 36, 36M, 213 and 234, were made available to the industry. Later, 2 canes from the Coimbatore, India, station, Co. 281 and Co. 290, were released, both of which have played an important part in the re-establishment and expansion of the industry.

For several years after intensive testing of varieties was undertaken in Louisiana as a consequence of the failure of the Noble canes, considerable attention was

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given to the testing of imported varieties, and growers probably looked to them as offering the principal hope for the future progress of the industry. But as the breeding work at Canal Point got under way, and an increasing number of varieties bearing the C. P. label became available for testing, attention shifted to them, with correspondingly less interest manifested in imported varieties. Nevertheless, the testing of imported canes has continued at Houma, and in view of the inquiries received from growers from time to time regarding the possible adaptability to Louisiana conditions of varieties that are grown commercially in other countries, or of new seedlings of promise about which they have read, a summary of the work that has been done with such canes should be of interest as a reminder that this source of new material is not being overlooked.

Since 1930, nearly 500 imported varieties have been tested at Houma. This total includes only those that might be expected to have some commercial value, and not the considerable number of "wild" canes that were studied from the standpoint of their use in breeding. Among the 500 were 13 from Coimbatore, India, 35 from Java, 23 from the Philippines, 18 from Hawaii, 13 from Queensland, 16 from South America (principally Tucuman, Argentina), and 39 from West Indian breeding stations. These canes have been put through the same tests to which the seedlings produced at Canal Point are subjected. Since the present testing procedure was inaugurated in 1935, under which tests for disease resistance precede agronomic trials, only 2 foreign varieties, Co. 270 and Tucuman 1376, have been considered of sufficient promise to turn over to the agronomists, and only one of these, Co. 270, was advanced to their outfield tests. It was subsequently discarded.

Of 67 new importations received at Houma in 1943, 13 made sufficient growth to permit a sucrose analysis and 7 of these were high enough to warrant increasing them for further study. If they continue to show promise in 1944, they will be turned over to the agronomists for testing. Four of the 7 are from Coimbatore, Co. 385, Co. 407, Co. 408 and Co. 413.

Susceptibility to diseases has been the principal cause of elimination of the imported canes. All information available indicates that certain of the strains of sugarcane mosaic present in Louisiana are more severe than those occurring in other countries. Louisiana is one of the sub-tropical cane-growing areas of the world where red rot is an important disease, and many varieties that can be successfully grown in tropical countries, succumb to this disease here. Our heavy and sometimes inadequately drained soils favor root rot and make it more severe here than it is in some other countries. It is possible that our short growing season may cause chlorotic streaks to be more severe here than in countries with longer seasons, by preventing infected plants from overcoming the early retarding effect of this disease to the extent they might with an 18- to 24-month crop season. However, before becoming discouraged over the fact that diseases prevent the utilization here of varieties that are of great value elsewhere, it should be recalled that 7 of what are generally considered to be the major sugarcane diseases of the world are not known to occur in continental United States. Every precaution should be taken to prevent their introduction.

The Role of Red Rot in the Windrowing for Seed of Present Day Sugarcane Varieties in Louisiana

I. L. Forbes, P. J. Mills, and P. H. Dunckelman

The fall planting season of 1943 was abnormally wet in most parts of the "Sugar Belt" of Louisiana. As a result we had several inquiries from growers as to the adaptability of the present commercial varieties for spring planting. Since we had no experimental data to answer the question scientifically, our recommendations could only be based on field observations of the behavior of the varieties that had been in cultivation for several years. Of course we did have data on the relative resistance and susceptibility of the commercial varieties to red rot, and we leaned heavily on this information in making our recommendations. However, we were awakened to the fact that we should really have some experimental data that would tell us how well a particular variety would keep as seed cane in the windrow. Consequently, about two hundred stalks of each of the following varieties were windrowed: C.P. Nos. 29/320, 29/120, 29/103, 33/425, 29/116, 33/243, 34/120, 33/310, Co. 281, Co. 290, and the unreleased variety C.P. 36/105. Windrowing was done in the old fashion of placing stalks, with adhering leaves and tops, in sugarcane middles (stubble cane in this case), and covering with two furrows of a turning plow. The cane was windrowed on November 16.

On February 28, 1944, the stalks were taken from the windrow, stripped, and examined for physical condition which consisted of determining the percentage of good eyes on a number of stalks of each variety, and the presence and severity of red rot. Three plots of 25 row feet each were planted with each variety. In each plot, 110 good eyes were planted. Yield tests from these plantings will be compared with similar plots planted in the fall of 1943. The following table is a record of the total number of eyes planted in each plot in order to have 110 healthy eyes to a section of row 25 feet in length:

Variety	Total number of eyes planted per section of row 25 feet in length		
	Section I	Section II	Section III
C. P. 29/320	119	115	120
Co. 290	305	289	241
C. P. 29/120	127	120	125
C. P. 29/103	127	126	122
C. P. 33/425	128	121	119
C. P. 29/116	156	145	181
C. P. 33/243	136	153	147
C. P. 34/120	142	150	159
C. P. 36/105	148	146	147
C. P. 33/310	117	124	118
Co. 281	187	173	162

From the table it is seen that Co. 290 in particular was severely damaged in the windrow. Co. 281 likewise suffered considerable damage. C. P. 33/243, C. P. 29/116, and C. P. 34/120 also had quite a number of dead eyes. Upon splitting a number of stalks of each of the eleven varieties, it was very apparent that the damage to the seed cane was due to red rot. In Co. 290 the upper one-half to two-thirds of every stalk was completely rotted throughout. In general, the lower 3 to 5 eyes on each stalk of Co. 290 were sound and the tissues of nodes and internotes were clear. In Co. 281 also, there was a general rot throughout considerable areas of many stalks. This was true, but to a lesser extent in C. P. 34/120. In C. P. 29/116 only occasional eyes were

affected with the red rot. The other varieties were remarkably free from red rot infections. Occasionally a red rot lesion was found in some part of a stalk, apparently either as a result of entrance through a borer puncture or by direct penetration.

From the limited data of one lesion it appears that the varieties C. P. 29/120, C. P. 33/310, and C. P. 29/103 are almost perfect windrowing canes for seed purposes. Also C. P. 36/105 (unreleased), C. P. 29/116, C. P. 33/425, and C. P. 29/320 windrowed satisfactorily. The varieties C. P. 33/243 and C. P. 34/120 rated suspectible and moderately susceptible respectively to red rot, are on the border line, and ordinarily should not be windrowed. Co. 290 and Co. 281 are definitely not windrowing canes for seed purposes.

Cost and Returns on Small Family Sized Sugar Cane Farms in 1938, 1940 and 1942

By J. Norman Efferson
Associate Economist
Louisiana Agricultural Experiment Station

As part of a state wide study of cost and returns for different farm enterprises, the Louisiana Agricultural Experiment Station has been conducting a series of cost studies in the Louisiana Sugarcane Area.

These studies include cost and return on the operations of sugar mills; cost and returns on operations of large sugarcane farms and cost and returns on the operations of the small family-sized sugarcane farms. This report summarizes the results on the small family-size type of farm. The series was started in 1938 when detailed records of the farm businesses of 500 sugarcane farmers, selected on the basis of stratified-random samples, were collected and analyzed. The study was repeated in 1940 when records of 453 farmers were collected and in 1942 when 467 records were obtained. The field work on a similar study has been completed for 1943 with the collection of approximately 150 records, but the analysis of this phase of the study has not been completed.

In each year a trained enumerator visited each farm and recorded careful estimates of the previous year's business, as obtained from the farmers' records; records of local dealers and agents and the farmer's memory.

The farms studied had an average of 41 acres in sugarcane in 1938, 35 acres in 1940 and 35 acres in 1942. In each year the sugarcane acreage reported was about one-half of the total acres in all crops. The yield of sugarcane averaged 22 tons per acre in 1938; 14 tons per acre in 1940 and 17 tons per acre in 1942 (table 1):

TABLE 1—Number and Size of Small Sugar Cane Farms studied in 1938, 1940, and 1942 in the Louisiana Sugar Area.

	1938	1940	1942
Number of farms	500	453	467
Acres in Cane	41	35	35
Total acres in crops	86	85	73
Tons of cane produced per acre	22.2	14.5	17.4
Tons of cane sold per farm	835	448	605

Cost and Returns Per Acre

Total cash farm expenses on the farms surveyed averaged $2,876 in 1938, $2,173 in 1940 and $2,576 in 1942. Non-cash expenses, including share-rent on rented farms, or interest on the investment on owned farms, averaged about $700 per farm in each of the three years. Total costs, including both cash and non-cash expenses but not including any charge to the farm operator for his labor, averaged $3,569 in 1938, $2,786 in 1940 and $3,294 in 1942 (table 2).

TABLE 2—Costs and Returns from Producing Sugar Cane on Small Sugar Cane Farms in Louisiana, 1938, 1940, and 1942

Costs and Returns Per Farm	1938	1940	1942
Cash Farm expenses	2,876	2,173	2,576
Rent and interest	693	613	718
Total costs of operating the farm	3,569	2,786	3,294
Receipts from sources other than sugar cane	413	524	642
Net cost of producing cane sold for sugar	3,156	2,262	2,652
Total returns from cane sold for sugar	3,075	1,659	3,169
Profit from sugar cane to pay the operator for his labor	—81	—603	648
Value of farm privileges	321	343	510
Total cash and non-cash income to the operator to pay for his labor	240	—260	1,158
Cash return per hour of labor to the operator	—.03	—.20	.22
Non-cash return per hour of labor to the operator	.11	.11	.17
Total cash return per month to the operator for his labor	—7	—50	51
Total non-cash return per month to the operator for his labor	27	29	43

In all three years, the major source of income was from the sale of sugarcane and governmental payments on the sugarcane crop. Total income from the cane averaged $3,075 in 1938, $1,659 in 1940 and $3,169 in 1942. The net cost of producing cane averaged $3,156 in 1938, $2,262 in 1940 and $2,652 in 1942. The resulting net profit to the farmer to pay him for his labor for the year's work was an average loss of $81 in 1938, $603 in 1940 and a profit of $648 in 1942. In more simple terms this resulted in a loss of 3 cents per hour of labor by the operator in 1938; a loss of 20 cents per hour of labor in 1940 and a profit of 22 cents per hour of labor in 1942. If the noncash value of farm perquisites are added to the net farm profit in order to determine a measure of return directly comparable to similar earnings of industrial workers or farm laborers the result on these farms would be a total net return per hour of labor of 8 cents in 1938; a loss of 9 cents per hour of labor in 1940 and a return of 39 cents per hour of labor in 1942.

These figures indicate that returns from sugarcane on the small family-sized farms were relatively high in 1942 but extremely low in 1938 and 1940. Low returns in 1938 were primarily due to a relatively low price received for sugar cane. In 1940, one of the extreme bad years in recent history in regard to sugarcane production, weather conditions were such that yields were extremely bad and the price was still fairly low. The 1942 crop season provided yields slightly less than average and an improved price situation. Along with these favorable factors, however, came increased costs for labor and other materials used in the production of sugarcane. This increase of costs moved upward at a more rapid rate in 1943 and present indications in 1944 are that costs are increasing still further. As a result, although the final information is not available on costs and returns in 1943 and 1944, the indications are that the 1942 season was or will be considered the most favorable sugarcane season for the small sugarcane farmers during the present war period.

Even in 1942, however, returns to sugarcane farmers were relatively low compared to alternatives obtained in near by industries. The 1942 average cash return per month to the average small sugarcane farmer amounted to $54. In addition, he received non-cash return representing the value of milk, vegetables and other farm privileges produced on the farm and consumed by the farm family amounting to $43 per month. This makes a total of $97 per month or about $3.50 per work day as the average return to the sugarcane farmer for his work in the most favorable year experi-

enced in recent history. As farmers in the area could obtain considerably higher wages in near-by industries the result was a period of discouragement on the part of producers of sugarcane and the danger of a reduction in sugarcane acreage. This was recognized when incentive payments were made on the 1943 sugar cane crop and announced for the 1944 crop. With increasing labor costs, however, it seems doubtful that the incentive payments announced for 1944 will be sufficiently high to maintain sugarcane production in 1945.

Cost and Returns Per Acre and Per Ton

The net cost per acre for producing sugar cane, not including the value of the operator's labor, averaged $77 in 1938, $65 in 1940 and $76 in 1942. Total returns averaged $77, $47, and $91, respectively. This resulted in a loss to the operator of $2 in 1938, $18 in 1940 and a return of $15 per acre in 1942 to pay him for his labor on the sugarcane crop.

On a ton basis net costs, not including the value of the operator's labor, averaged $3.78 in 1938, $5.05 in 1940 and $4.38 in 1942. Total income per ton, including sales and governmental payments, averaged $3.68 in 1938, $3.70 in 1940 and $5.24 in 1942. A net return per ton to the operator for his labor indicated a loss of 10 cents per ton in 1938; a loss of $1.75 per ton in 1940 and a gain of 86 cents per ton in 1942. These cost and return data on a per ton and a per acre basis do not clearly indicate the changes in cost that have occurred since 1938 since the most important factor determining the cost per unit is the yield per acre, (table 3).

TABLE 3—Costs and Returns per acre and per ton of Sugar Cane on Small Farms in the Louisiana Sugar Cane Area, 1938, 1940, and 1942.

Costs and Returns per Acre	1938	1940	1942
Total returns per acre	75	47	91
Net cost per acre not including the value of the operator's labor	77	65	76
Net returns per acre to the operator for his labor	—2	—18	15
Costs and Returns per Ton			
Total returns per ton	3.68	3.70	5.24
Net cost per ton not including the value of the operator's labor	3.78	5.05	4.38
Net returns per ton to the operator for his labor	—.10	—1.75	.86

Estimated Returns in 1944

With detailed cost and returns available for several years it is possible to make a rough approximation of expected earnings in 1944 based on actual costs and returns in previous years plus expected increases in costs and returns for 1944. Since the most important factor affecting returns on sugarcane or any other type of farm is the yield per acre, which is decided primarily by weather conditions, it is necessary to summarize these expected net profits under varying yield conditions. On this basis, the estimated total return per hour of labor on family-sized sugarcane farms, including the expected cash profit plus the expected non-cash return in the form of farm perquisites, is shown in table 4. This summary of expected returns per hour for the crop is summarized under different yields ranging from 14 to 20 tons per acre and under different expected prices ranging from $5 to $6 per ton. The average yield per acre based upon the last 10 years is approximately 17 tons, thus, the expected return per hour under conditions of average yield of 17 tons is the most important summary in the table.

TABLE 4—Estimated Total Return per hour of Labor to Farmers Producing Sugar Cane on Small "Family Sized" Farms in Louisiana, 1944.[1]

Gross Returns Per Ton	Average Yield Per Acre						
	14 Tons	15 Tons	16 Tons	17 Tons	18 Tons	19 Tons	20 Tons
5.00	*	.02	.07	.12	.17	.21	.26
5.20	.01	.16	.11	.16	.21	.26	.30
5.40	.05	.10	.15	.20	.25	.29	.34
5.60	.09	.14	.19	.24	.29	.33	.38
5.80	.12	.18	.22	.27	.33	.37	.42
6.00	.16	.21	.26	.31	.37	.41	.46
6.20	.20	.25	.29	.35	.40	.45	.50

[1] The total return per hour of labor includes the cash return to the operator for his work plus the non-cash return in the form of farm perquisites. This estimate is based upon a 20 percent increase in the costs in 1944 over 1942.
* Less than one cent per hour.

The data indicate a return per hour of labor of 12 cents if the farmer makes 17 tons per acre and received $5 per ton. If the farmer receives $6 per ton and makes an average yield the return per hour labor will be 31 cents. If unusually good yield conditions occur and farmers receive an expected price of $6 per ton and an average yield of 20 tons per acre the rate per hour of labor will be 46 cents. On the other hand if yield conditions are such as existed in 1940 when an average yield of only 14 tons was obtained, $6 cane would only result in a return per hour of labor of 16 cents.

Under the expected 1944 price of around $6 per ton, farmers can expect between 25 cents and 35 cents as a return per hour of labor on sugarcane, assuming normal yields, with the chances of making as high as 46 cents if yields are extremely good or making as low as 16 cents if yields are extremely poor. These facts indicate that the small sugarcane farmer in Louisiana can expect a reasonably good return for sugarcane production in 1944 but cannot afford to pay more than 25 cents to 35 cents per hour of labor for all labor hired if he is to break even on the enterprise. With prevailing wage rates in near-by industries in the area considerably above this figure, the indications are that labor will be very scarce item in the sugarcane area in 1944.

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Some Effects of Trash in Cane on Milling Results

By George Arceneaux, Agronomist, and Lester G. Davidson, Associate Chemist, Division of Sugar Plant Investigations, Bureau of Plant Industry, Soils, and Agricultural Engineering, Agricultural Research Administration, United States Department of Agriculture[1]

Sugarcane growers of Louisiana have rapidly expanded their use of mechanical harvesters in attempting to adjust current operations to the curtailment in labor supply induced by war conditions. As a result, problems related to trash in mill cane have been correspondingly intensified. Most harvesters now in use merely cut and top the cane. Adhering leaves are commonly burned after the cane has been stacked prior to loading but quite frequently the burning is very incomplete. In such cases a relatively high percentage of the trash remains on the cane. In rainy weather burning is impracticable and thus it occasionally becomes necessary to send the bulk of the trash to the mill with the cane. Therefore the effect of trash on factory efficiency is of great practical importance at this time and has attracted much attention within recent years.

Arnold and Keller (2) in tests during 1939 and 1941 found no reduction in apparent sucrose extraction due to the presence of relatively green trash in proportions ranging from 6.75% to 10.8% of the weight of the cane. Etheredge and Henry (4) in tests during 1942 obtained a sucrose extraction (true) of 91.77% from cane containing 10.59% trash as compared with a sucrose extraction of 92.31% from cane containing 1.62% trash. The trash had the additional effect of lowering the purity of normal juice.

Plan of the experiment

This report summarizes results of tests conducted with the experimental mill at the United States Department of Agriculture Sugar Plant Field Station at Houma, Louisiana, to determine the effect of different proportions of dry and green trash on milling.

Results of previous tests (1) have shown that it is possible to duplicate the work of an ordinary commercial factory by repeatedly milling a small quantity of sugarcane with a suitable laboratory mill. The equipment employed for these studies consisted of a 3-roller mill with rollers 10" in diameter and 14" long on which a hydraulic pressure of 30 tons was maintained.

The essential plan of the experiment was to take a number of highly comparable samples of clean cane of each several varieties, to mill certain samples after known quantities of dry or green trash had been added, and to mill others without trash as controls. In adding the trash to the cane an attempt was made to secure as uniform a distribution throughout the sample as practically possible. Obviously the distribution of the trash within the sample was somewhat different from the original distribution, but it is not believed that this difference was a factor of any importance in milling results.

Both the dry and the green trash used comprised stalk leaves only; i.e., tops or portions of tops were not included. The trash corresponded to that included in unstripped mill cane harvested by hand, but the experimental conditions did not necessarily correspond to those prevailing in the case of cane harvested mechanically which, because of harvesting machines frequently failing to top shorter stalks, may include varying quantities of tops. It is probable that inclusion of extensive quantities of tops in mill cane would result in somewhat greater losses of sugar than those resulting from inclusion of stalk leaves only.

From an experimental point of view the procedure followed presents several important advantages. The quantity of trash in each sample can be accurately controlled. Small samples of cane can be made more nearly comparable than can the much larger quantities required for reliable extraction results with the usual factory equipment. Juice extraction and yield of bagasse can be determined directly and can be measured with a high degree of accuracy. The simplified procedure permits of a greater number of replications than can ordinarily be obtained under factory conditions, thus resulting in correspondingly increased accuracy of average results. There is no evidence to indicate that the effect of trash on extraction and other results under conditions prevailing in these tests will differ essentially from that which may be expected in the case of factory milling.

On November 25, 1942, 3 varieties—Co. 281, C.P. 29/320 and C.P. 29/116, were tested. On December 15, 1942, similar tests were conducted with Co. 281, Co. 290 and C.P. 34/120. All samples consisted of plant cane. For each test 8 samples of 80 pounds each were taken from clean cane of a given variety. To three of the samples were added 2½, 5, and 7½ pounds of dry trash, respectively. To three others

[1]The authors are indebted to Mr. J. J. Munson, President of South Coast Corporation for many helpful suggestions in connection with the planning of the experiment and interpretation of results.

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were added 6, 12 and 18 pounds of green trash, respectively. The trash in each case had been obtained from cane of the particular lot to which it was added. The remaining two samples were milled free of trash.

Table 1 gives the percentage of dry matter in samples taken from each of the 12 lots of trash as determined by drying to a constant weight at 103° C. Observed values ranged from 76.3% to 87.2% for dry trash and from 30.2% to 43.2% for green trash. It should be mentioned that preliminary analyses of trash had indicated that 2.5 pounds of dry trash contained approximately the same quantity of dry matter as 6 pounds of green trash, and thus 5 pounds of dry trash, the same quantity of dry matter as 12 pounds of green trash, etc. It is interesting to note that in the average of all tests the following relationships were maintained: 2.5 pounds of dry trash or 6 pounds of green trash—2.06 pounds dry matter; 5 pounds of dry trash or 12 pounds of green trash—4.12 pounds dry matter; etc.

Each sample with or without the trash was first crushed and the crusher juice weighed and sampled. Crusher juice extraction ranged from 59.9 to 68.4 depending on the variety. The bagasse was then milled 4 times, and 20 percent cold maceration was applied in the course of milling. The juice extracted from these millings was weighed and sampled. The remaining bagasse was also weighed and sampled.

It should be noted that in each case the sample consisted of 80 pounds of clean cane. Therefore in cases where trash had been added the mixture of cane and trash actually weighed more than 80 pounds. Juice and sucrose extraction values were all computed on the basis of the weight of clean cane and not on the basis of gross weight. Thus differences observed between treatments reflect only the effect of trash on extraction and recovery and such differences would be over and above those due to exaggeration in weight of cane due to the presence of trash.

TABLE 1—Percent dry matter in dry and green trash from different varieties of sugarcane.

Condition of Trash	Variety and date of harvest						
	Co. 281 Nov. 25	C. P. 29/116 Nov. 25	C. P. 29/320 Nov. 25	C. P. 34/120 Dec. 15	Co. 290 Dec. 15	Co. 281 Dec. 15	Mean
Dry-----	83.7	76.3	79.4	82.8	85.8	87.2	82.5
Green----	30.6	43.2	34.0	34.2	34.3	30.2	34.4

Analytical Methods

I. Juice Analyses:

Each juice sample as received from the mill was strained through a 20-mesh screen to remove the larger particles of bagasse. A portion of this juice was then poured into a cylinder, and permitted to stand for 15 minutes, following which Brix and temperature readings were taken. Another portion of the juice was clarified with Horne's dry subacetate of lead, filtered, and the filtrate polarized in a 200 mm tube. From the polarization and Brix values, the percent sucrose was determined by the use of Schmidt's Table (9) for undiluted solutions. The juice samples were allowed to settle for an hour. Two 25 ml portions of each sample were then taken with a pipette. The samples were taken with the tip of the pipette about an inch below the surface, to avoid including any of the material that had settled out, or any of the material that had floated to the top. Each 25 ml portion of each sample was transferred to an individual glass bottle with a screw cap, and 10 drops of formaldehyde were added as a preservative.

One 25 ml portion of each sample was used for the determination of total nitrogen, which was determined by essentially the Gunning Method (3).

A 25 ml portion of the juice was transferred to a 500 ml Kjeldahl flask, and 40 ml of concentrated sulphuric acid and 10 gm of a solid salt mixture were added. The salt mixture consisted of 20 parts by weight of potassium sulfate, 2 parts ferrous sulfate, and 1 part cupric sulfate. The mixture in the flask was digested until oxidation was complete. The digested material was then diluted with 200 ml of distilled water. Two or three pieces of mossy zinc and an excess of 50% caustic soda solution were added. The ammonia was distilled off as usual into 25 ml of standard hydrochloric acid previously diluted to 75 ml. The distillate was back titrated with carbonate-free standard sodium hydroxide using methyl red indicator. Several blank control tests were made for each set of standard solutions used, and the results corrected. Because of the large proportion of carbohydrate material present in the juice, it was not necessary to use special reagents to retain the traces of nitrate nitrogen present.

The remaining 25 ml portion of each juice sample was used for the determination of normal ash. The juice was transferred to a weighed platinum dish, evaporated to a thick syrup on a steam bath, charred over a small flame, and the ashing completed in an electric muffle furnace at a dull red heat until constant weight was obtained.

The ash in the platinum dish was treated with dilute hydrochloric acid, evaporated to dryness, and baked for one hour at 105° C. to dehydrate the silica present. 25 ml of 5% hydrochloric acid were added and the dish was placed on the steam bath for a few minutes to dissolve the soluble portion of the

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ash. The solution was then filtered into a 250 ml volumetric flask, and the precipitate washed. The filtrate and washings in the flask were diluted to the mark with distilled water, and the solution thoroughly mixed. This solution was used for the determination of some of the ash constituents.

The phosphates were determined volumetrically by the method described by Hillebrand and Lundell (6) using an aliquot of the above silica-free ash solution equivalent to 10 ml of juice.

Calcium oxide was determined by permanganate titration using the method described by Hillebrand and Lundell (6), using an aliquot of the above ash solution equivalent to 10 ml of juice. Blank determinations were made at the same time in order to determine the endpoint correction for the titration.

Potash was determined by the sodium cobaltinitrite method, essentially as described by Schueler and Thomas (7), with the exception that the precipitation was carried out in a solution of acetone and water instead of alcohol and water as described by the above investigators. Standard solutions containing known amounts of potash were analyzed with each set of samples, and the results for the samples were corrected. Potash was determined on an aliquot of the ash solution equivalent to 4 ml of juice.

II. Trash Analyses:

Samples of dry and of green trash for each variety were weighed, air dried for 24 hours, re-weighed, and chopped in a Wiley mill to pass through a 2mm screen. Corrections for loss or gain in weight during the air drying were made in all subsequent calculations.

For the determination of dry matter, duplicate samples, of approximately 90 gm each in the case of the dry trash, and 50 gm each in the case of green trash, were placed in washed, dried, and weighed cotton bags and dried to constant weight at 103° C. in an electric oven.

Fiber was determined on duplicate samples of approximately 125 gms each by placing the samples in bags similar to those used for the dry matter determination and leaching in a tank of running city water for 3 days, draining, and drying to constant weight in an electric oven at 103° C.

100 grams of the chopped trash were heated with about 450 ml of distilled water for an hour at 100° C. in a Norris bagasse digester (9). The digesters were weighed before and after heating and the loss of water during heating was corrected for in subsequent calculations. The samples were then cooled to room temperature, and as much solution as possible squeezed out with the tamp. These solutions were then filtered through Eaton-Dikeman #193 filter paper.

Ash was determined on a 50 ml portion of the above filtered solution exactly as was done in the determination of ash in juice.

Nitrogen was determined on another 50 ml portion of the above filtered solution by the Kjeldahl Method modified to include nitrogen of nitrates (3). Blank control tests were made and the results corrected.

III. Bagasse Analyses:

Fiber was determined on duplicate bagasse samples of 100 gm each in exactly the same way as fiber was determined in trash. The determinations were made on the bagasse as received from the mill. Apparent sucrose was determined by digesting the bagasse by Norris' Method (9), and polarizing the clarified solution in a 400 mm tube.

Table 2 summarizes the essential data from results of extraction measurements, analyses of juice for Brix and percent sucrose (polarization), and analyses of bagasse for percent sucrose.

Table 3 gives theoretical values for sugar recovery and losses in molasses as based on the Winter-Carp formula. (5)

TABLE 2—The effect of dry and green trash on juice analyses and extraction.

Treatment (Pounds of trash added to 80 pounds of clean cane)	Condition of Trash	Tests on November 25, 1942			Tests on December 15, 1942			Mean
		Co. 281	C. P. 29/320	C. P. 29/116	Co. 281	Co. 290	C. P. 34/120	
(a) Percent sucrose (Pol.) in crusher juice								
None (Check)	-----	14.19	14.29	14.91	15.27	12.76	15.40	14.47
2-1/2	Dry	14.24	14.35	14.91	14.94	12.36	14.93	14.29
5	Dry	13.80	14.12	15.13	14.91	12.59	15.12	14.28
7-1/2	Dry	13.31	14.49	14.98	15.56	12.36	15.30	14.33
None (Check)	-----	13.54	14.04	15.08	15.09	12.73	15.50	14.33
6	Green	13.52	14.17	14.47	14.30	12.11	15.45	14.00
12	Green	12.83	13.75	14.04	14.80	11.63	14.87	13.65
18	Green	12.59	13.26	14.37	14.08	11.91	14.93	13.52
(b) Apparent purity of crusher juice								
None (Check)	-----	82.89	82.74	82.60	85.88	78.96	85.27	83.06
2-1/2	Dry	82.94	82.61	82.60	86.11	78.18	83.74	82.70
5	Dry	82.05	81.76	83.13	85.94	78.64	83.91	82.57
7-1/2	Dry	81.06	82.71	82.76	86.88	77.93	84.67	82.67
None (Check)	-----	81.22	82.49	82.86	86.43	78.77	85.31	82.85
6	Green	81.10	82.53	82.70	84.47	76.84	85.03	82.11
12	Green	79.10	81.17	79.90	85.45	74.98	83.92	80.75
18	Green	77.62	79.93	80.64	83.66	76.51	84.02	80.40
(c) Apparent purity of mixed juices (Crusher juice plus juice from subsequent millings)								
None (Check)	-----	81.86	81.98	82.28	85.03	78.09	83.94	82.20
2-1/2	Dry	81.23	81.12	80.71	84.56	77.37	82.21	81.20
5	Dry	80.38	79.87	81.84	84.11	77.06	82.19	80.91
7-1/2	Dry	78.26	80.29	81.25	84.57	76.48	82.57	80.57
None (Check)	-----	81.10	81.75	82.70	85.31	78.26	84.07	82.20
6	Green	79.10	80.35	79.54	82.23	74.98	82.46	79.78
12	Green	75.94	78.15	77.83	81.81	72.07	80.76	77.76
18	Green	73.35	77.00	77.14	79.64	73.62	79.88	76.77

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TABLE 2 (Continued)—The effect of dry and green trash on juice analyses and extraction.

Treatment (Pounds of trash added to 80 pounds of clean cane)	Condition of Trash	Tests on November 25, 1942			Tests on December 15, 1942			Mean
		Co. 281	C. P. 29/320	C. P. 29/116	Co. 281	Co. 290	C. P. 34/120	
(d) Pounds of sucrose extracted per ton of cane								
None (Check)	-----	219.7	217.7	235.4	239.9	210.3	237.1	226.7
2-1/2	Dry	220.3	218.2	230.4	234.2	202.8	229.8	222.6
5	Dry	211.8	214.3	234.4	234.1	205.8	231.0	221.9
7-1/2	Dry	203.7	214.7	237.6	240.5	203.0	230.6	221.7
None (Check)	-----	209.4	214.0	232.5	238.4	210.3	239.0	223.9
6	Green	214.2	217.3	234.0	232.5	203.7	240.6	223.7
12	Green	206.3	222.4	231.5	243.9	200.0	240.5	224.0
18	Green	207.5	214.0	235.9	239.4	212.2	236.2	224.2
(e) Pounds of sucrose in bagasse from 1 ton of cane								
None (Check)	-----	10.6	11.7	11.2	9.1	7.3	10.4	10.0
2-1/2	Dry	9.9	15.6	12.5	9.6	7.5	10.4	10.9
5	Dry	11.7	16.1	15.7	10.2	8.6	10.7	12.2
7-1/2	Dry	12.3	17.7	16.7	11.4	9.7	12.2	13.3
None (Check)	-----	9.7	12.2	14.3	7.5	7.2	10.4	10.2
6	Green	10.9	13.6	11.9	6.6	6.7	10.9	10.1
12	Green	10.5	13.4	14.3	8.1	7.5	10.6	10.7
18	Green	14.0	15.3	18.0	6.9	8.0	10.3	12.1
(f) Pounds of sucrose per ton of cane								
None (Check)	-----	230.3	229.4	246.6	249.0	217.6	247.5	236.7
2-1/2	Dry	230.2	233.7	242.9	243.8	210.3	240.2	233.5
5	Dry	223.5	230.4	250.1	244.3	214.4	241.7	234 1
7-1/2	Dry	216.0	232.4	254.3	251.9	212.7	242.8	235.0
None (Check)	-----	219.1	226.2	246.8	245.9	217.5	249.4	234.1
6	Green	225.1	230.9	245.9	239.1	210.4	251.5	233.8
12	Green	216.8	235.8	245.8	254.1	207.5	251.1	235.2
18	Green	221.5	229.3	253.9	246.3	220.2	246.5	236.3
(g) Percent sucrose extraction								
None (Check)	-----	95.4	94.9	95.5	96.3	96.6	95.8	95.8[1]
2-1/2	Dry	95.7	93.4	94.9	96.1	96.4	95.7	95.3[1]
5	Dry	94.8	93.0	93.7	95.8	96.0	95.6	94.8[1]
7-1/2	Dry	94.3	92.4	93.4	95.5	95.4	95.0	94.3[1]
None (Check)	-----	95.6	94.6	94.2	96.9	96.7	95.8	95.6[1]
6	Green	95.2	94.1	95.2	97.2	96.8	95.7	95.7[1]
12	Green	95.2	94.3	94.2	96.0	96.4	95.8	95.2[1]
18	Green	93.7	93.3	92.9	97.2	96.4	95.8	94.9[1]
(h) Sucrose percent bagasse								
None (Check)	-----	2.12	2.12	2.36	1.98	1.74	2.02	2.06
2-1/2	Dry	1.70	2.42	2.20	1.73	1.45	1.64	1.86
5	Dry	1.88	2.29	2.38	1.60	1.46	1.57	1.86
7-1/2	Dry	1.66	2.25	2.40	1.55	1.46	1.63	1.82
None (Check)	-----	1.92	2.22	2.84	1.61	1.75	1.99	2.05
6	Green	1.89	1.95	2.04	1.27	1.38	1.79	1.72
12	Green	1.60	1.86	2.03	1.32	1.24	1.55	1.60
18	Green	1.87	1.98	2.00	1.04	1.18	1.34	1.55
(i) Percent sucrose (Pol.) in normal juice								
None (Check)	-----	13.80	13.93	14.63	14.89	12.43	14.93	14.10
2-1/2	Dry	13.73	13.88	14.35	14.45	12.05	14.43	13.81
5	Dry	13.31	13.59	14.59	14.37	12.15	14.59	13.77
7-1/2	Dry	12.65	13.86	14.48	14.92	11.95	14.70	13.76
None (Check)	-----	13.14	13.70	14.83	14.67	12.46	15.05	13.97
6	Green	12.92	13.57	14.00	13.72	11.64	14.76	13.43
12	Green	12.14	13.04	13.47	13.96	11.01	14.09	12.95
18	Green	11.72	12.58	13.54	12.20	11.29	13.98	12.55
(j) Normal juice extraction percent cane								
None (Check)	-----	79.60	78.14	80.45	80.56	84.61	79.42	80.46
2-1/2	Dry	80.21	78.61	80.29	81.04	84.17	79.64	80.66
5	Dry	79.59	78.86	80.34	81.46	84.71	79.17	80.69
7-1/2	Dry	80.52	77.46	82.06	80.59	84.92	78.45	80.67
None (Check)	-----	79.69	78.12	78.39	81.25	84.39	79.39	80.20
6	Green	82.91	80.06	83.57	84.75	87.52	81.49	83.38
12	Green	84.95	85.25	85.93	87.36	90.84	84.21	86.42
18	Green	85.52	85.04	87.12	90.69	93.99	84.46	87.80

[1] Weighted average.

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TABLE 3—The effect of dry and green trash on theoretical sucrose recovery.

Treatment (Pounds of trash added to 80 pounds of clean cane)	Condition of Trash	Tests on November 25, 1942			Tests on December 15, 1942			Mean
		Co. 281	C. P. 29/320	C. P. 29/116	Co. 281	Co. 290	C. P. 34/120	
Pounds sucrose recovered per ton of cane[1]								
None (Check)	-----	200.2	198.4	215.1	223.0	186.7	219.0	207.1
2-1/2	Dry	199.9	197.9	208.4	217.1	179.1	210.0	202.1
5	Dry	191.1	192.8	213.6	216.4	181.3	211.0	201.0
7-1/2	Dry	181.0	193.6	215.7	222.9	178.0	211.2	200.4
None (Check)	-----	187.2	194.9	213.1	221.9	186.9	220.9	204.2
6	Green	191.0	196.0	209.9	212.5	176.6	220.1	201.0
12	Green	180.2	197.5	205.1	222.2	169.0	214.7	198.1
18	Green	177.3	188.4	208.0	214.9	181.8	212.4	197.1
Pounds sucrose in molasses from 1 ton of cane[1]								
None (Check)	-----	19.5	19.3	20.3	16.9	23.6	18.1	19.6
2-1/2	Dry	20.4	20.3	22.0	17.1	23.7	19.8	20.6
5	Dry	20.7	21.5	20.8	17.7	24.5	20.0	20.9
7-1/2	Dry	22.7	21.1	21.9	17.6	25.0	19.4	21.3
None (Check)	-----	22.5	19.1	19.4	16.5	23.4	18.1	19.8
6	Green	23.2	21.3	24.1	20.0	26.8	20.5	22.6
12	Green	26.1	24.9	26.4	21.7	31.0	25.8	26.0
18	Green	30.2	25.6	27.9	24.5	30.4	23.8	27.1
Percent of sucrose in cane recovered[1] [2]								
None (Check)	-----	86.9	86.5	87.2	89.6	85.8	88.5	87 5[2]
2-1/2	Dry	86.8	84.7	85.8	89.0	85.2	87.4	86.6
5	Dry	85.5	83.7	85.4	88.6	84.6	87.3	85.9
7-1/2	Dry	83.8	83.3	84.8	88.5	83.7	87.0	85.3
None (Check)	-----	85.4	86.2	86.3	90.2	85.9	88.6	87.2
6	Green	84.9	84.9	85.4	88.9	83.9	87.5	86.0
12	Green	83.1	83.8	83.4	87.4	81.4	85.5	84.2
18	Green	80.0	82.2	81.9	87.3	82.6	86.2	83.4

[1]Calculated.
[2]Means under this sub-heading weighted.

Table 4 summarizes the results of a statistical analysis of the data given in tables 2 and 3 and gives pertinent information essential to the interpretation of the results as a whole. Under "Range of average values" are given the average value as observed with (1) check and (2) highest trash (dry and green) for each of 13 important milling and recovery

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TABLE 4—Summary of statistical analysis of results of milling tests to determine the effect of trash on extraction and sugar recovery. (Data given in Tables 2 and 3)

Milling or Recovery Factor	VARIABLE											
	Dry trash in cane (0, 2-1/2, 5, 7-1/2 pounds to 80 pounds of cane)						Green trash in cane (0, 6, 12, 18 pounds to 80 pounds of cane)					
	Range of average Values (Check and highest trash)	Error term M. S.[1] (D. F. = 15)[2]	Treatment Effect				Range of average Values (Check and highest trash)	Error term M. S. (D. F. = 15)	Treatment Effect			
			Total		Linear term				Total		Linear term	
			M. S. (D.F. = 3)	F	M. S. (D.F. = 1)	F			M. S. (D.F. = 3)	F	M. S. (D.F. = 1)	F
Percent Sucrose in Crusher Juice (Pol.)	14.47–14.33	.07	.05	(a)	.05	(a)	14.33–13.52	.07	.79	11.2**	2.30	32.9**
Apparent Purity of Crusher Juice	83.06–82.67	.34	.27	(a)	.50	1.5	82.85–80.40	.63	7.90	12.5 **	22.67	36.0**
Apparent Purity of Mixed Juices	82.20–80.57	.43	2.95	6.9**	8.02	18.7**	82.20–76.77	.75	34.54	46.1**	100.43	133.9**
Sucrose Extracted (pounds) Per ton of cane	226.7–221.7	15.39	32.93	2.1	74.10	4.8*	223.9–224.2	17.95	.27	(a)	.42	(a)
Sucrose in Bagasse (pounds) Per ton of cane	10.0–13.3	.99	12.39	12.5**	36.96	37.3**	10.2–12.1	1.47	4.96	3.4*	11.66	7.9*
Sucrose (pounds) per ton of cane	236.7–235.0	19.23	11.93	(a)	6.30	(a)	234.1–236.3	22.89	7.43	(a)	18.10	(a)
Percent Sucrose Extraction	95.8–94.3	.19	1.95	10.3**	5.81	30.6**	95.6–94.9	.28	.87	3.1	2.16	7.7*
Sucrose percent Bagasse	2.06–1.82	.02	.07	3.5*	.14	7.0*	2.05–1.55	.02	.31	15.5**	.80	40.0**
Percent Sucrose in Normal Juice	14.10–13.76	.06	.16	2.7	.35	5.8*	13.97–12.55	.11	2.27	20.6**	6.78	62.5**
Normal Juice Extraction percent Cane	80.46–80.67	.36	.07	(a)	.12	(a)	80.20–87.80	1.03	68.59	66.6**	200.23	194.4**
Pounds of Sucrose Recovered per ton of cane[3]	207.1–200.4	20.84	88.72	4.3*	203.32	9.8**	204.2–197.1	21.33	59.95	2.8	172.08	8.1*
Percent of Sucrose in Cane Recovered[3]	87.5–85.3	.25	5.42	21.7 **	16.13	64.5**	87.2–83.4	.59	17.30	29.3**	50.83	86.2**
Pounds of Sucrose in Molasses from 1 ton of Cane[3]	19.6–21.3	.35	3.01	8.6**	8.48	24.2**	19.8–27.1	1.16	64.93	56.0**	188.00	162.1**

[1] Mean square.
[2] Degrees of freedom.
[3] Calculated.

* Moderately significant, probability .05 or better.
** Highly significant, probability .01 or better.
(a) M. S. smaller than error M. S. therefore definitely insignificant.

factors. To facilitate interpretation mean square values calculated from the data are given in each case for the following: error term, total treatment effect, and linear term of treatment effect. F values for making tests of significance according to Snedecor (8) are also given and the order of significance is indicated in each case.

Discussion of Results

Bearing out the trend displayed in the case used as illustration above, the effect of increments of dry and green trash on affected milling and recovery factors assumed a very definitely linear relationship as might have been expected. Therefore in each of such cases the F value for the linear term indicates a higher order of significance than does the corresponding F value for total treatment effect. In fact, in almost every case the former was but slightly under 3 times the latter.

The effect of trash on percent sucrose extraction presents a rather interesting relationship. It will be noted that the addition of either dry or green trash caused a significant reduction in percent sucrose extraction. It will be noted also that the addition of dry and also of green trash was accompanied by a definite decrease in percentage of sucrose in bagasse. The obvious conclusion is that trash, while retaining some sucrose does not retain it in the same ratio as does the component of the bagasse derived from the stalk. The losses in sucrose extraction with increases in trash content are reflected in corresponding increases in the absolute quantity of sucrose in bagasse from a ton of cane.

It should be recognized that in comparing absolute values such as pounds of sucrose extracted per ton of cane, averages may be greatly affected by acci-

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dental differences in juice analyses between individual samples; while in the case of relative values such as percent sucrose extraction, errors from the source mentioned are largely if not entirely eliminated. Therefore measurements of the latter category are the more sensitive and may be employed to detect differences of a relatively smaller order than can measurements of the former sort.

The exceedingly important effect of trash on juice purity and inferentially on sugar recovery is considered the most significant disclosure of this study. Dry trash did not significantly affect the purity of crusher juice but did very significantly lower the purity of mixed juices (crusher juice plus juice from subsequent extractions). Green trash lowered significantly the purities of both crusher and mixed juices.

Data pertaining to sucrose recovery (tables 2 and 3) are of especial significance in that they reflect combined extraction and recovery losses. The depressing effect of trash on sugar recovery was sufficiently pronounced to be reflected in absolute yields (pounds of sucrose recovered per ton of cane) in the case of both dry and green trash and was especially pronounced on percent recovery.

Data on normal juice are of interest in that the latter is taken as the basis for the purchase of cane in Louisiana. In these studies Brix of normal juice was calculated by applying the reduction factor .985, found in previous dry milling tests to be characteristic of the particular mill, to the corresponding Brix value of crusher juice. Purity of normal juice was assumed to be the same as that of corresponding mixed juices and the percent sucrose (pol) was computed from calculated values of Brix and purity determined as per above. Juice extraction percent cane for normal juice was calculated from the observed value for mixed juices with appropriate adjustment for differences in Brix values.

The marked lowering of percent sucrose in normal juice and the almost equally important increase in normal juice extraction with an increase in percentage of green trash is especially notable in that with purchased cane it injects a factor entirely unrelated to the more fundamental problem of milling efficiency.

This experiment as planned was not designed to measure differences between varieties in regard to the effect of trash on milling. Tests with Co. 281 only, were duplicated and these were conducted at two different dates. However, the rather large differences observed between varieties in certain cases suggest that such differences may be due to varietal peculiarities. The relatively little effect of either dry or green trash on percent sucrose extraction in the case of C.P. 34/120 and the much more pronounced effect observed in the case of C.P. 29/116 may be worthy of note.

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Impurities in Juice Derived from Trash

Calculated losses in sugar according to the Winter-Carp formula (5) from increases in proportion of non sucrose solids in the juice may be regarded as representative of the effect of such impurities of the nature and in the proportions ordinarily found in sugarcane juice as measured by the difference between Brix and percent sucrose (pol.). It is conceivable however that impurities extracted from the trash may differ in composition from the non sucrose fraction as ordinarily found in juice from the sugarcane stalk.

Table 5 gives 3 important components of the non sucrose fraction of soluble solids in juice as found in juice from clean cane and also in juice from cane milled with the various proportions of green and dry trash covered by the experiment. The ash and nitrogen contents of the juice were determined directly in accordance with methods previously described. The difference between Brix and percent sucrose (pol.) was taken as a measure of total non sucrose solids in the juice. From the value as thus determined was subtracted the sum of percent ash and percent nitrogen to arrive at a rough estimate of "other soluble solids". It is recognized that possible differences between percent sucrose as determined by polarization and the true value, and also between Brix and the true value for total soluble solids greatly detract from the significance of values thus calculated. It is believed, however, that inasmuch as the difference between Brix and percent sucrose by polarization is quite generally taken as a basis for calculating theoretical sugar recovery, the effect of trash on the ratio of ash and nitrogen to remaining non sucrose

TABLE 5—Changes in quantity and composition of non-sucrose solids in extracted juice due to differences in proportions of dry and green trash.

Treatment (Pounds of trash added to 80 pounds of clean cane)	Condition of trash	Tests on November 25, 1942			Tests on December 15, 1942			Mean	
		Co. 281	C.P. 29/320	C.P. 29/116	Co. 281	Co. 290	C.P. 34/120	Pounds	Percent of Check
Pounds of ash extracted per ton of cane									
None (Check)	------	10.79	9.40	8.88	9.64	15.03	10.32	10.68	100.0
2-1/2	Dry	11.59	10.45	9.28	9.84	15.80	10.83	11.30	105.8
5	Dry	11.36	10.44	9.48	10.06	15.45	10.67	11.24	105.2
7-1/2	Dry	12.18	10.12	9.90	10.00	16.53	10.91	11.61	108.7
None (Check)	------	11.56	9.57	8.81	9.52	14.78	10.16	10.73	100.0
6	Green	12.63	10.89	9.57	11.44	16.90	11.48	12.15	113.2
12	Green	13.77	13.18	11.32	12.11	18.86	12.70	13.66	127.3
18	Green	15.98	13.80	12.09	13.58	19.60	14.37	14.90	138.9
Pounds of nitrogen extracted per ton of cane									
None (Check)	------	0.82	0.50	0.38	0.68	0.46	0.36	0.53	100.0
2-1/2	Dry	.82	.51	.38	.69	.45	.38	.54	101.9
5	Dry	.83	.51	.41	.73	.45	.38	.55	103.8
7-1/2	Dry	.92	.54	.41	.69	.36	.38	.55	103.8
None (Check)	------	.93	.51	.35	.66	.45	.36	.54	100.0
6	Green	.91	.58	.43	.82	.52	.43	.61	113.0
12	Green	.99	.69	.51	.92	.64	.49	.71	131.5
18	Green	1.13	.75	.56	.98	.72	.58	.79	146.3
Estimated pounds of other non-sucrose soluble solids extracted per ton of cane. Total non-sucrose solids calculated from differences between percent Brix and Sucrose (Pol.) values.									
None (Check)	------	37.08	37.99	41.43	31.92	43.53	34.71	37.78	100.0
2-1/2	Dry	38.51	39.67	41.83	32.22	43.05	38.51	38.96	103.1
5	Dry	39.55	43.06	42.12	33.45	45.40	38.99	40.43	107.0
7-1/2	Dry	43.52	42.03	44.53	33.18	45.52	37.38	41.03	108.6
None (Check)	------	39.72	37.69	39.46	30.89	43.16	34.75	37.61	100.0
6	Green	44.46	41.65	50.17	37.98	50.56	39.24	44.01	117.0
12	Green	50.56	48.32	54.13	40.99	58.04	43.35	49.23	130.9
18	Green	58.27	49.37	57.27	46.67	55.69	46.27	52.26	139.0

solids as thus calculated may be of practical significance. It may be assumed of course that non sucrose solids in sugarcane juice other than ash and nitrogen will consist largely of reducing sugars. Unfortunately time and facilities did not permit a direct determination of the latter on the large number of juice samples involved.

It is interesting to note that ash and "other soluble solids" increased in approximately the same proportion from additions of dry trash, while the increase in nitrogen was slight and apparently insignificant. From additions of green trash, ash and "other soluble solids" increased in approximately equal ratios and nitrogen increased in somewhat higher proportions.

Table 6 gives the calculated quantities of ash and of each of the following 4 components—P_2O_5, CaO, K_2O, and "other constituents" in juice from a ton of clean cane and from a ton of cane plus the various proportions of dry and green trash as observed with Co. 290 and C.P. 34/120. It will be noted that P_2O_5 and K_2O increased at lower rates while CaO and "other constituents" increased at higher rates than did total ash with increments of dry and green trash. The greatest disparity in this regard was found between relative increases in CaO and total ash, but inasmuch as the former accounts for such a minor part of total ash, this is probably of little practical importance.

TABLE 6—Changes in quantity and composition of ash in extracted juice due to differences in proportions of dry and green trash.

Treatment (Pounds of trash added to 80 pounds of clean cane)	Condition of trash	Tests of Co. 290	Tests of C. P. 34/120	Mean	
				Pounds	Percent of Check
Pounds of P_2O_5 extracted per ton of cane					
None (Check)	-----	1.54	1.76	1.65	100
2-1/2	Dry	1.64	1.82	1.73	105
5	Dry	1.57	1.83	1.70	103
7-1/2	Dry	1.57	1.81	1.69	102
None (Check)	-----	1.45	1.78	1.61	100
6	Green	1.67	1.91	1.79	111
12	Green	1.68	2.05	1.86	116
18	Green	1.80	2.14	1.97	122
Pounds of CaO extracted per ton of cane					
None (Check)	-----	0.44	0.31	0.37	100
2-1/2	Dry	.50	.36	.43	116
5	Dry	.56	.40	.48	130
7-1/2	Dry	.62	.41	.51	138
None (Check)	-----	.47	.30	.38	100
6	Green	.59	.45	.52	137
12	Green	.75	.52	.63	166
18	Green	.86	.65	.75	197
Pounds of K_2O extracted per ton of cane					
None (Check)	-----	7.36	5.16	6.26	100
2-1/2	Dry	7.97	5.20	6.58	105
5	Dry	7.77	5.29	6.53	104
7-1/2	Dry	7.79	5.40	6.59	105
None (Check)	-----	7.82	5.36	6.59	100
6	Green	8.40	5.83	7.11	108
12	Green	9.48	6.42	7.95	121
18	Green	9.65	6.94	8.29	126
Pounds of other constituents of ash (By difference)					
None (Check)	-----	5.69	3.09	4.39	100
2-1/2	Dry	5.69	3.45	4.57	104
5	Dry	5.55	3.15	4.35	99
7-1/2	Dry	6.55	3.29	4.92	112
None (Check)	-----	5.04	2.72	3.88	100
6	Green	6.24	3.29	4.76	123
12	Green	6.95	3.71	5.33	137
18	Green	7.29	4.64	5.96	154
Pounds of ash extracted per ton of cane					
None (Check)	-----	15.03	10.32	12.67	100
2-1/2	Dry	15.80	10.83	13.31	105
5	Dry	15.45	10.67	13.06	103
7-1/2	Dry	16.53	10.91	13.72	108
None (Check)	-----	14.78	10.16	12.47	100
6	Green	16.90	11.48	14.19	114
12	Green	18.86	12.70	15.78	127
18	Green	19.60	14.37	16.98	136

Summary and Conclusions

Results of this experiment show quite plainly that losses in sucrose from the milling of cane with trash may be expected from two distinct sources: (1) from the retention of sucrose by the trash in the bagasse and (2) from the effect of the resulting increase in impurities of the juice. In comparing the effect of dry and green trash we find that dry trash had relatively little effect on the purity of the juice and related sugar losses, but had a much more pronounced effect on loss of sucrose in bagasse. The opposite was true in the case of green trash.

The problem of generalizing as to the net effect of dry and green trash on sucrose losses may be simplified by expressing the results in terms of proportions of oven-dry trash. As stated above, this experiment was so designed that increments of green trash as well as dry trash gave in all cases approximately uniform increases in dry matter. Therefore the difference in percent sucrose recovery between the check and the highest dry trash and between the check and the highest green trash reflect the effects of equal quantities of oven-dry trash, i.e. 155 pounds per ton of trash-free cane. In the case of "dry" trash the calculated difference in sucrose recovery was 2.2% of sucrose in cane and in the case of green trash it amounted 3.8%.

By applying these values to the average sucrose content of all samples in the experiment (234.8 pounds per ton of clean cane) it may be calculated that the dry trash caused a loss of 5.17 pounds of sucrose (234.8×2.2%) and that the green trash caused a loss of 8.92 pounds of sucrose (234.8×3.8%). To

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state it differently, an estimated loss of 1 pound of sucrose was incurred with a quantity of dry trash corresponding to 30 pounds dry matter (155÷5.17) or with a quantity of green trash corresponding to 17.4 pounds dry matter 155÷8.92).

As plainly indicated by results summarized in table 5, green trash in the proportions added, contributed a greater quantity of impurities to the juice than did the equivalent of dry trash on an oven-dry basis.

TABLE 7—Percentage of dry matter, fiber, and soluble solids in dry and green trash from 3 varieties of sugarcane on December 15, 1942.

Condition of Trash	Dry Matter[1] percent Trash	Fiber[2] percent Trash	Soluble solids percent dry matter			
			Ash[3]	Nitrogen[3]	Other soluble solids by difference	Total[4]
Tests of C. P. 34/120						
Dry	82.8	78.4	1.06	0.05	4.20	5.31
Green	34.2	29.6	3.36	.17	9.92	13.45
Tests of Co. 290						
Dry	85.8	82.4	.88	.05	3.03	3.96
Green	34.3	29.6	3.55	.17	9.98	13.70
Tests of Co. 281						
Dry	87.2	82.0	.88	.07	5.01	5.96
Green	30.2	27.2	2.81	.17	6.95	9.93
Average of 3 varieties						
Dry	85.27	80.93	.94	.06	4.09	5.09
Green	32.90	28.80	3.24	.17	9.05	12.46

[1] Determined by drying to constant weight in an electric oven at 103° C. Average of duplicate determinations.

[2] Determined by leaching for 3 days in running city water, followed by drying to constant weight in an electric oven at 103° C. Average of duplicate determinations.

[3] Trash leached 1 hour in boiling water in Norris bagasse digester. Ash and nitrogen determined on filtered leachate.

[4] Based on difference between fiber and dry matter content of trash.

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Results of analyses of green and dry trash of 3 varieties summarized in table 7 show that dry matter from the green trash contained more than twice as much soluble solids as did the same quantity of dry matter from dry trash. It is interesting to note that in the case of dry trash, nitrogen and ash accounted for lesser fractions of total soluble solids than they did in the case of green trash.

It should be mentioned that the dry trash used in this experiment consisted of foliage which had aged and dried on the growing plant. Under such conditions, a large proportion of the soluble solids in a leaf are translocated to other parts of the plant during the process of aging. Therefore the dry trash used in this experiment is not comparable to trash which has dried on the cane between time of cutting and time of milling. It may be assumed that the latter will retain practically all of its soluble solids and may therefore behave in the factory more nearly like green trash than like the dry trash used in these studies. This particular point merits further study.

It is considered worthy of note that ash, nitrogen, and other soluble solids were apparently contributed by the trash as a whole in approximately the same proportions as found among impurities of the juice extracted from the stalk. Dry trash contributed little nitrogen but this deficiency was apparently compensated for by increased proportions of nitrogen in impurities contributed by green trash. On the other hand the disturbance in the ration between individual components of the ash fraction (P_2O_5, CaO, K_2O, etc.), induced as a result of impurities contributed by the trash, may be of some practical significance.

The marked effect of green trash on percent extraction of normal juice and on sucrose content as calculated according to conventional methods, while of little fundamental significance, is of great practical importance in the case of cane sold under the Louisiana contract. The diluting effect of green trash resulted in a greatly reduced value for sucrose percent normal juice and a greatly increased value for juice extraction percent (clean) cane. This is a very good example of how the sucrose content of normal juice may be affected by factors entirely unrelated to the actual analysis of the juice of the cane.

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Results of Sugarcane Variety Tests in Louisiana During 1943

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Confirming results of previous tests C. P. 34/120 again proved widely adaptable and promises to become a variety of first-rank importance in Louisiana. Because of superior productiveness, sugar content at least equal to that of Co. 281 and reasonably satisfactory windrowing qualities C. P. 34/120 should generally replace Co. 281 in future plantings. C. P. 34/120 has proved slightly inferior to C. P. 29/320 in sugar content but has produced cane of satisfactory commercial quality in northern parishes where the latter is extensively grown for mid season to late milling. Because of significant advantages in production of sugar per acre C. P. 34/120 should replace C. P. 29/320 except where the latter is cultivated for early milling. C. P. 34/120 has also displayed important advantages over Co. 290 and C. P. 29/116, especially on light soils of the southeastern parishes and on heavy soils throughout the Sugar District. C. P. 34/120 is considered less satisfactory than either Co. 281 or C. P. 29/320 for mechanical harvesting, but will probably prove somewhat more satisfactory than Co. 290 and definitely more so than C. P. 29/116.

Apparently, few of the unreleased varieties now in cooperative tests can compete with C. P. 34/120 for mid-season to late milling. C. P. 36/105, occurring in plant cane tests only, compared favorably with C. P. 34/120 in sugar content and yield of sugar per acre. C. P. 33/253 has shown promise as a possible substitute of C. P. 28/19 on muck soils. In plant cane tests C. P. 35/14 and 36/62 gave relatively high yields of sugar per acre and compared favorably with C. P. 28/19 in sugar content. Favorable field-handling qualities of these 2 varieties are considered important advantages, but unfavorable stubbling qualities displayed in preliminary tests may greatly limit their usefulness as possible substitutes for C. P. 28/19 on muck soils and for early milling purposes generally.

TABLE 1—Results of plant cane variety tests on light soils in Louisiana during 1943.

Variety	Godchaux (Raceland) 12-2[1]	Oaklawn (Franklin) 11-18	Albania (Jeanerette) 11-16	Roland's Farm (Erath) 12-7	Stella (St. Martinville) 11-15	Alma (Lakeland) 11-23	Average
Average yield of cane per acre (tons)							
*Co. 281	20.1	10.7	17.3	16.6	20.7	23.2	18.10
*Co. 290	32.3	18.8	31.7	23.1	30.9	31.7	28.08
*C. P. 28/19	24.3	10.0	14.1	14.7		20.9	16.88[3]
*C. P. 29/116	39.8	29.5	31.6	25.3	30.6	38.2	32.53
*C. P. 29/320	23.0	16.3	22.2	11.1	22.8	29.6	20.83
C. P. 32/206	20.3	14.9	18.8	16.4	22.2	22.1	19.12
C. P. 34/1	34.4	24.2	28.0	21.7	28.4	25.4	27.02
C. P. 34/21	34.5	17.5	29.7	25.1	29.7	32.8	28.22
C. P. 34/53	27.1	24.8	23.0	16.4	24.5	27.3	23.85
C. P. 34/75	29.2	25.6	21.4	21.0	24.9	33.0	25.85
C. P. 34/80	29.4	20.5	22.0	21.4	25.9	29.9	24.85
C. P. 34/86	29.5	26.3	25.2	23.5	26.4	26.9	26.30
C. P. 34/92	27.4	25.3	28.4	15.4	23.1	31.4	25.17
C. P. 34/115	30.2	28.4	29.0	22.9	29.5	37.6	29.60
*C. P. 34/120	33.4	25.2	26.1	20.1	24.6	34.4	27.30
C. P. 34/139	34.7	27.0	33.2	21.9	28.9	35.7	30.23
Difference							
For P.=.05	4.05	5.86	4.08	3.15	3.07	4.38	3.29[4]
For P.=.01	5.41	7.83	5.45	4.21	4.10	5.86	4.36
Average indicated yield of 96° sugar per ton of cane (pounds)[2]							
Co. 281	185.8	182.8	214.4	225.8	183.4	167.5	191.8
Co. 290	177.2	194.4	183.1	218.7	179.0	154.7	182.1
C. P. 28/19	213.4	200.4	216.8	249.1		191.5	211.1[3]
C. P. 29/116	170.9	193.3	172.8	187.9	142.6	141.6	166.6
C. P. 29/320	200.0	215.3	201.8	233.3	199.7	190.2	202.9
C. P. 32/206	210.6	228.1	234.7	250.5	199.9	191.3	216.7
C. P. 34/1	166.1	178.2	163.6	180.6	154.5	160.1	166.4
C. P. 34/21	180.9	206.3	194.7	227.3	173.0	173.6	190.0
C. P. 34/53	173.3	184.3	174.2	200.1	172.7	164.7	176.7
C. P. 34/75	171.3	186.0	176.0	219.7	178.6	147.6	177.1
C. P. 34/80	214.1	206.9	211.8	226.1	175.2	169.9	198.9
C. P. 34/86	174.2	195.4	181.0	199.9	177.4	190.1	185.9
C. P. 34/92	177.7	189.5	183.8	205.1	174.4	148.5	177.0
C. P. 34/115	188.5	190.1	192.0	224.2	177.4	155.8	185.2
C. P. 34/120	195.0	198.1	191.6	219.0	195.0	183.7	195.5
C. P. 34/139	164.4	186.9	168.0	184.7	154.0	118.8	160.2
Difference							
For P.=.05	15.17	25.18	16.35	18.83	17.98	17.45	11.86[4]
For P.=.01	20.27	33.63	21.83	25.17	24.02	23.31	15.73
Average indicated yield of 96° sugar per acre (pounds)							
Co. 281	3735	1956	3709	3748	3796	3886	3472
Co. 290	5724	3655	5804	5052	5531	4904	5112
C. P. 28/19	5186	2004	3057	3662		4002	3564[3]
C. P. 29/116	6802	5702	5460	4791	4364	5409	5421
C. P. 29/320	4600	3509	4480	2590	4553	5630	4227
C. P. 32/206	4275	3399	4412	4108	4438	4228	4143
C. P. 34/1	5714	4312	4581	3919	4388	4067	4497
C. P. 34/21	6241	3610	5783	5705	5138	5694	5362
C. P. 34/53	4696	4571	4007	3282	4231	4496	4214
C. P. 34/75	5002	4762	3766	4614	4447	4871	4577
C. P. 34/80	6295	4241	4660	4839	4538	5080	4942
C. P. 34/86	5139	5139	4561	4698	4683	5114	4889
C. P. 34/92	4869	4794	5220	3159	4029	4663	4456
C. P. 34/115	5693	5399	5568	5134	5233	5858	5481
C. P. 34/120	6513	4992	5001	4402	4797	6319	5337
C. P. 34/139	5705	5046	5578	4045	4451	4241	4844
Difference							
For P.=.05	872	1273	882	777	715	910	687[4]
For P.=.01	1165	1700	1178	1039	955	1218	912

[1] Date of harvest.
[2] Weighed average values given in this and subsequent tables.
[3] Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).
[4] Experimental error based on Location x Variety interaction term.
* Varieties grown commercially. Others have not been released.

Tests on Light Soils

Tables 1-5 inclusive, summarize results of sugarcane variety tests at 6 locations on representative light soils of the Louisiana Sugarcane District. Methods of experimental technique followed were essentially as described in previous reports.

C. P. 34/120

Of special interest are results obtained with C. P. 34/120 released for commercial culture in 1942. Seed supplies of this variety during 1944 will be sufficient to meet all requirements, therefore an appraisal of the variety's yield qualities in comparison with present commercial varieties scheduled to be replaced in part or in whole, is considered important at this time.

In the average of all tests so far conducted C. P. 34/120 has maintained a moderate superiority over Co. 281 in indicated yield of sugar per ton of cane. Comparisons in this regard from results of tests during 1943 are distinctly in favor of C. P. 34/120. C. P. 34/120 is also considered suitable for windrowing purposes.[1]

[1]Laurtizen, J. I. Windrowing qualities of C. P. 34/120 and certain other commercial varities of sugarcane in Louisiana. Sugar Bulletin, V. 21, No. 23, pp. 200-202, September 1, 1943.

Superiority of C. P. 34/120 over Co. 281 in indicated sugar production per acre was maintained by an exceedingly wide margin in all tests at all stations. Therefore, in spite of somewhat less satisfactory windrowing qualities, C. P. 34/120 should generally replace Co. 281 in future plantings.

C. P. 34/120 has been consistently below C. P. 29/320 in indicated yield of sugar per ton of cane. Average differences in tests during 1943 were 7.4 pounds and 11.0 pounds in plant cane and first stubble tests respectively. In indicated yield of sugar per acre however C. P. 34/120 surpassed C. P. 29/320 by average difference of 1110 pounds and 1897 pounds in plant cane and first stubble tests respectively. No second stubble comparisons are available. C. P. 34/120 can therefore be advantageously substituted for C. P. 29/320 where the latter is planted for mid-season to late milling.

In the average of plant cane and first stubble tests C. P. 34/120 surpassed Co. 290 and also C. P. 29/116 in yield of sugar per acre and maintained a distinct superiority to both varieties in indicated yield of sugar per ton of cane. These relationships applied quite

TABLE 2—Results of plant cane preliminary variety tests on light soils in Louisiana during 1943.

Variety	Godchaux (Raceland) 12-2[1]	Oaklawn (Franklin) 11-18	Albania (Jeanerette) 11-16	Roland's Farm (Erath) 12-7	Stella (St. Martinville) 11-15	Alma (Lakeland) 11-23	Average
Average yield of cane per acre (pounds)							
*Co. 281	23.2	11.0	15.2	13.8	22.6	25.8	18.60
*C. P. 28/19	23.0	10.0	11.8	12.4		21.0	16.00[2]
*C. P. 34/120	39.4	24.8	21.6	19.8	32.6	31.0	28.20
C. P. 31/551	36.2	20.8	21.6	17.2	21.6	36.0	25.57
*C. P. 33/310	30.2	16.2	18.8	15.0	28.4	28.2	22.80
C. P. 33/485	23.8	9.8	15.8	10.6	21.8	21.6	17.23
C. P. 34/54	28.8	29.8	31.6	18.0	27.2	35.6	28.50
C. P. 34/141	35.8	16.2	23.2	18.4	31.8	33.6	26.50
C. P. 35/14	21.4	18.4	17.8	14.2	22.2	17.2	18.53
C. P. 36/17	35.8	21.0	24.0	17.8	26.0	27.8	25.90
C. P. 36/19	24.2	25.4	23.6	16.8	23.4	27.2	23.43
C. P. 36/55	33.6	24.0	19.6	16.0	29.8	28.8	25.30
C. P. 36/62	27.8	17.6	22.8	19.2	25.8	30.6	23.97
C. P. 36/75	29.6	22.4	20.2	18.8	21.0	32.0	24.00
C. P. 36/85	32.2	27.0	26.8	22.0	30.6	38.2	29.47
C. P. 36/94	37.8	24.0	30.8	22.0	28.0	36.2	29.80
C. P. 36/105	39.4	17.2	30.6	24.2	31.6	30.8	28.97
C. P. 36/191	39.0	25.8	28.0	21.0	36.2	31.2	30.20
Difference							
For P.=.05	9.08	9.00	7.41	6.42	6.14	8.01	3.89[3]
For P.=.01	12.47	12.36	10.18	8.82	8.43	11.00	5.15
Average indicated yield of 96° sugar per ton of cane (pounds)							
Co. 281	185.6	190.5	218.4	226.7	184.6	161.2	189.8
C. P. 28/19	206.3	213.2	215.8	250.6		227.1	220.5[2]
C. P. 34/120	195.2	202.3	199.3	229.6	191.9	190.1	199.2
C. P. 31/551	179.0	208.9	175.3	223.3	187.0	129.6	177.0
C. P. 33/310	183.9	190.7	185.5	216.0	177.7	146.1	179.3
C. P. 33/485	186.1	*198.3	194.7	215.9	199.1	201.7	197.7
C. P. 34/54	150.9	174.0	151.3	203.8	151.8	128.4	156.0
C. P. 34/141	143.8	197.1	157.4	204.4	166.4	153.9	164.9
C. P. 35/14	223.3	230.2	231.0	247.3	216.2	213.0	225.8
C. P. 36/17	182.1	188.4	186.4	197.5	156.8	149.3	175.4
C. P. 36/19	190.5	219.8	214.9	225.3	199.3	185.2	204.5
C. P. 36/55	203.5	215.6	207.9	223.9	186.5	178.5	200.0
C. P. 36/62	217.1	225.3	248.8	251.8	227.4	213.1	228.7
C. P. 36/75	176.8	206.8	193.6	209.5	179.4	154.3	183.5
C. P. 36/85	173.9	202.7	173.9	212.4	177.8	144.3	177.4
C. P. 36/94	185.2	212.2	192.4	222.6	181.9	136.9	184.4
C. P. 36/105	187.0	207.2	204.6	204.9	208.3	186.8	198.4
C. P. 36/191	174.6	187.9	190.9	230.0	177.3	166.9	184.6
Difference							
For P.=.05	16.07	24.33	22.35	24.11	21.35	25.02	14.66[3]
For P.=.01	22.07	33.41	30.70	33.12	29.33	34.36	19.43
Average indicated yield of 96° sugar per acre (pounds)							
Co. 281	4306	2095	3320	3128	4172	4159	3530
C. P. 28/19	4745	2132	2546	3107		4769	3528[2]
C. P. 34/120	7691	5017	4305	4546	6256	5893	5618
C. P. 31/551	6480	4345	3786	3841	4039	4666	4526
C. P. 33/310	5554	3089	3487	3240	5047	4120	4089
C. P. 33/485	4429	1943	3076	2289	4340	4357	3406
C. P. 34/54	4346	5185	4781	3668	4129	4571	4447
C. P. 34/141	5148	3193	3652	3761	5292	5171	4369
C. P. 35/14	4779	4236	4112	3512	4800	3664	4184
C. P. 36/17	6519	4522	4474	3515	4077	4151	4543
C. P. 36/19	4610	5583	5072	3785	4664	5037	4792
C. P. 36/55	6838	5174	4075	3582	5558	5141	5061
C. P. 36/62	6035	3965	5673	4835	5867	6521	5483
C. P. 36/75	5233	4632	3911	3939	3767	4938	4403
C. P. 36/85	5600	5473	4661	4673	5441	5512	5227
C. P. 36/94	7001	5093	5926	4897	5093	4956	5494
C. P. 36/105	7368	3564	6261	4959	6582	5753	5748
C. P. 36/191	6899	4848	5345	4830	6418	5207	5576
Difference							
For P.=.05	1760	1897	1542	1488	1272	1553	827[3]
For P.=.01	2417	2608	2118	2043	1747	2133	1096

[1] Date of harvest.
[2] Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).
[3] Experimental error based on Location x Variety interaction term.
* Varieties grown commercially.

generally in all sections. C. P. 34/120 should have an important advantage over the two other varieties under growing conditions where level of maturity is of critical importance, and may in addition be found useful for relatively early milling in areas now largely devoted to Co. 290 and C. P. 29/116.

Comparisons of C. P. 34/120 with C. P. 29/120 and 29/103 on light soils during 1943 are available in first stubble tests only. In indicated yield of sugar per acre C. P. 34/120 surpassed C. P. 29/120 by an average difference of 1571 pounds and surpassed C. P. 29/103 by an average difference of 2167 pounds. In indicated yield of sugar per ton of cane C. P. 34/120 was slightly and perhaps insignificantly higher than either of the other two varieties.

C. P. 34/120 is considered less satisfactory than either Co. 281 or C. P. 29/320 for mechanical harvesting, but will probably prove somewhat more satisfactory than Co. 290 and definitely more so than C. P. 29/116.

TABLE 3—Results of first stubble variety tests on light soils in Louisiana during 1943.

Variety	Godchaux (Raceland) 11-8[1]	Greenwood (Thibodaux) 11-1	Oaklawn (Franklin) 11-10	Albania (Jeanerette) 10-26	Roland's Farm (Erath) 11-12	Stella (St. Martinville) 10-27	Alma (Lakeland) 11-22	Average
Average yield of cane per acre (tons)								
*Co. 281	24.3	25.9	15.2	19.6	5.4	14.3	18.6	17.61
*Co. 290	31.7	40.6	23.4	32.1	22.4	30.9	26.9	29.71
*C. P. 28/19	27.7	28.6	17.1	17.4	7.9		21.9	20.76[2]
*C. P. 29/103	22.7	32.4	20.4	16.7	11.9	33.4	27.4	23.56
*C. P. 29/116	35.9	32.6	25.0	30.9	16.4	39.6	38.9	31.33
*C. P. 29/120	30.9	38.2	22.4	15.5	12.7	33.2	29.7	26.09
*C. P. 29/320	29.1	29.9	15.7	22.3	7.9	26.6	27.6	22.73
C. P. 31/509	34.2	37.8	19.2	25.4	16.6	35.5	25.6	27.76
C. P. 31/529	26.7	30.1	22.4	25.2	18.8	29.6	33.2	26.57
C. P. 32/206	23.6	26.9	19.1	17.4	15.3	28.8	26.0	22.44
*C. P. 33/243	30.7	26.8	17.8	25.1	13.6	25.6	22.4	23.14
C. P. 33/372	28.3	32.9	24.9	25.1	16.9	28.2	25.6	25.99
C. P. 33/409	28.7	28.6	23.7	22.3	11.9	18.1	26.3	22.80
C. P. 34/1	39.8	37.9	33.3	34.8	22.2	37.9	28.5	33.49
C. P. 34/21	33.5	31.4	18.5	20.4	13.4	31.1	33.3	25.94
C. P. 34/53	31.5	33.6		33.3	18.7	34.9	30.9	29.79[2]
C. P. 34/54	30.6	33.5		28.6		30.2	24.3	26.30[2]
C. P. 34/75	24.4	25.4		11.7	7.2	22.4	24.7	18.60[2]
C. P. 34/80	32.0	30.6		18.5	13.1	32.3	26.7	24.83[2]
C. P. 34/86	29.9	36.4		29.2	20.4	29.9	29.9	28.59[2]
C. P. 34/92	34.4	39.9		34.6	18.7	34.9	35.4	32.29[2]
C. P. 34/115	30.2	37.2		21.9	12.6	30.8	31.6	26.69[2]
*C. P. 34/120	38.5	37.9	28.6	33.5	22.6	36.4	40.1	33.94
C. P. 34/139	29.4	40.9	24.9	30.9	14.4	36.2	31.2	29.70
Difference								
For P.=.05	3.82	3.46	5.71	4.65	5.01	4.26	5.35	3.50[3]
For P.=.01	5.07	4.59	7.59	6.18	6.65	5.66	7.10	4.63
Average indicated yield of 96° sugar per ton of cane (pounds)								
Co. 281	176.9	154.9	195.4	183.6	187.1	178.3	198.6	179.6
Co. 290	168.5	162.6	192.5	178.7	183.5	151.7	177.3	171.9
C. P. 28/19	161.5	168.0	227.9	214.8	212.0		225.2	193.6[2]
C. P. 29/103	172.4	162.4	200.1	202.7	190.9	172.8	205.9	183.9
C. P. 29/116	161.4	152.0	195.6	163.2	188.1	134.1	190.0	166.3
C. P. 29/120	175.7	168.4	191.9	206.5	196.8	195.6	206.9	188.9
C. P. 29/320	195.0	177.1	211.3	207.4	224.4	201.8	223.6	202.5
C. P. 31/509	185.2	140.3	175.9	170.4	186.7	151.0	204.6	170.0
C. P. 31/529	166.7	153.8	190.2	178.9	178.4	169.4	187.6	174.4
C. P. 32/206	206.6	176.4	210.0	202.8	235.0	180.7	218.8	201.5
C. P. 33/243	176.3	172.9	196.1	202.7	188.8	197.8	216.0	192.0
C. P. 33/372	175.8	160.1	178.5	179.7	192.5	169.1	183.3	175.4
C. P. 33/409	172.1	163.8	170.5	192.9	178.7	176.6	201.2	179.1
C. P. 34/1	158.3	151.6	171.4	175.3	170.1	152.0	196.3	166.3
C. P. 34/21	172.6	154.6	194.0	178.5	193.9	154.1	192.0	174.3
C. P. 34/53	164.6	154.8		187.8	175.6	171.5	179.7	173.6[2]
C. P. 34/54	160.5	142.5		154.8		144.8	190.2	160.7[2]
C. P. 34/75	162.2	151.5		185.2	214.9	177.4	190.5	176.4[2]
C. P. 34/80	164.0	155.5		197.8	207.4	173.3	211.0	182.3[2]
C. P. 34/86	156.7	142.6		177.1	189.5	158.2	184.0	167.7[2]
C. P. 34/92	179.3	167.9		179.3	183.3	179.5	183.9	179.9[2]
C. P. 34/115	167.7	149.7		170.9	213.1	159.3	210.9	176.3[2]
C. P. 34/120	180.2	171.9	203.6	201.1	201.2	177.6	211.4	191.5
C. P. 34/139	142.8	135.0	188.6	169.6	198.9	135.1	170.9	157.5
Difference								
For P.=.05	14.67	15.87	13.17	18.59	15.65	17.67	17.14	11.78[3]
For P.=.01	19.48	21.07	17.49	24.69	20.79	23.46	22.76	15.58
Average indicated yield of 96° sugar per acre (pounds)								
Co. 281	4299	4012	2970	3599	1010	2550	3694	3162
Co. 290	5341	6602	4504	5736	4110	4688	4769	5107
C. P. 28/19	4474	4805	3897	3738	1675		4932	4020[2]
C. P. 29/103	3913	5262	4082	3385	2272	5772	5642	4333
C. P. 29/116	5794	4955	4890	5043	3085	5310	7391	5210
C. P. 29/120	5429	6433	4299	3201	2499	6494	6145	4929
C. P. 29/320	5674	5295	3317	4625	1773	5368	6171	4603
C. P. 31/509	6334	5303	3377	4328	3099	5360	5238	4720
C. P. 31/529	4451	4629	4260	4508	3354	5014	6228	4635
C. P. 32/206	4876	4745	4011	3529	3595	5204	5689	4521
C. P. 33/243	5412	4634	3491	5088	2568	5064	4838	4442
C. P. 33/372	4975	5267	4445	4510	3253	4769	4692	4559
C. P. 33/409	4939	4685	4041	4302	2127	3196	5292	4083
C. P. 34/1	6300	5746	5708	6100	3776	5761	5595	5569
C. P. 34/21	5782	4854	3589	3641	2598	4793	6394	4522
C. P. 34/53	5185	5201		6254	3284	5985	5553	5172[2]
C. P. 34/54	4911	4774		4427		4373	4622	4226[2]
C. P. 34/75	3958	3848		2167	1547	3974	4705	3281[2]
C. P. 34/80	5248	4758		3659	2717	5598	5634	4526[2]
C. P. 34/86	4685	5191		5171	3866	4730	5502	4794[2]
C. P. 34/92	6168	6699		6204	3428	6265	6510	5808[2]
C. P. 34/115	5065	5569		3743	2685	4906	6664	4706[2]
C. P. 34/120	6938	6515	5823	6737	4547	6465	8477	6500
C. P. 34/139	4198	5521	4696	5241	2864	4891	5332	4678
Difference								
For P.=.05	794	756	1163	997	1001	885	1164	706[3]
For P.=.01	1054	1004	1544	1324	1329	1176	1546	934

[1] Date of harvest.

[2] Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).

[3] Experimental error based on Location x Variety interaction term.

* Varieties grown commercially.

TABLE 4—Results of second stubble variety tests on light soils in Louisiana during 1943.

Variety	Greenwood (Thibodaux) 10-18[1]	Godchaux (Raceland) 10-20	Albania (Jeanerette) 10-25	Stella (St. Martinville) 10-27	Alma (Lakeland) 10-28	Average
Average yield of cane per acre (tons)						
Co. 281	13.4	18.6	10.9	6.9	18.3	13.62
Co. 290	32.4	26.2	18.5	22.6	29.6	25.86
C. P. 28/19	22.9	23.2	10.9		25.8	19.60[2]
C. P. 29/103	15.5	11.4	4.4		33.2	15.04[2]
C. P. 29/116	27.8	31.2	18.2	27.0	41.6	29.16
C. P. 29/120	29.9	30.4	12.3		32.0	25.06[2]
C. P. 29/320	24.3	23.6	16.2	16.8	28.5	21.88
Difference						
For P.=.05	5.10	5.18	2.04	2.19	4.09	5.35[3]
For P.=.01	6.91	7.01	2.77	3.07	5.55	7.28
Average indicated yield of 96° sugar per ton of cane (pounds)						
Co. 281	150.0	125.8	178.7	207.3	169.2	159.0
Co. 290	127.6	117.0	158.8	185.2	152.5	145.7
C. P. 28/19	164.1	139.1	201.3		207.4	181.9[2]
C. P. 29/103	151.7	125.2	166.3		179.8	167.1[2]
C. P. 29/116	132.9	119.6	158.3	171.7	158.5	147.7
C. P. 29/120	155.8	151.7	188.9		186.7	174.9[2]
C. P. 29/320	164.6	165.3	193.2	209.5	194.9	183.8
Difference						
For P.=.05	12.55	20.02	17.04	9.13	17.33	9.90[3]
For P.=.01	17.01	27.14	23.15	12.80	23.48	13.47
Average indicated yield of 96° sugar per acre (pounds)						
Co. 281	2010	2340	1948	1430	3096	2165
Co. 290	4134	3065	2938	4186	4514	3767
C. P. 28/19	3758	3227	2194		5351	3566[2]
C. P. 29/103	2351	1427	732		5969	2513[2]
C. P. 29/116	3695	3732	2881	4636	6594	4308
C. P. 29/120	4658	4612	2323		5974	4383[2]
C. P. 29/320	4000	3901	3130	3520	5555	4021
Difference						
For P.=.05	817	842	427	445	894	924[3]
For P.=.01	1108	1141	579	623	1211	1257

[1] Date of harvest.
[2] Average based on an assumed value for missing yield calculated according to Yates formula for determining missing plot values. (Paterson, D. D. Statistical Technique in Agricultural Research pp. 181-188).
[3] Experimental error based on Location x Variety interaction term.

C. P. 33/310

Results obtained with C. P. 33/310 (table 2) indicate a generally low order of relative productiveness. This confirms the view expressed on the occasion of the variety's release in 1943[2] to the effect that it is not considered highly promising except for cultivation on terrace soils of Lafayette and adjoining Parishes which are not represented in this series of tests. In the average of all tests C. P. 33/310 was more than 1500 pounds below C. P. 34/120 in indicated yield of sugar per acre and approximately 20 pounds below the latter in indicated yield of sugar per ton of cane.

Other Commercial Varieties

Yield relationships maintained in tests during 1943 between other varieties of present commercial importance—Co. 290, Co. 281, C. P. 29/320, C. P. 28/19, C. P. 29/116, C. P. 29/103, C. P. 29/120 and C. P 33/243—were on the whole in line with trends displayed during previous years. Yields of cane and sugar per acre from C. P. 28/19 were, however, consistently below levels usually maintained in comparison with C. P. 29/320. This apparently resulted in large measure from greater retardment of growth of C. P. 28/19 during the drought in April and early May. Because of the well recognized susceptibility of this variety to root rot injury, retardment of growth presumably resulted from cumulative effect of previous root damage.

Unreleased Varieties

Thirty-one unreleased varieties were included in tests summarized in tables 1 to 5, inclusive. The majority of these varieties fall in one or both of the following categories: (1) Varieties possessing satisfactory windrowing qualities and therefore possible competitors of Co. 281 and (2) vigorous varieties of relatively high productive capacity and relatively more satisfactory than Co. 290 and C. P. 29/116 in yield of sugar per ton of cane. C. P. 34/120 meets essential requirements of both groups and it is to be expected that, with continued satisfactory performance of C. P. 34/120, most varieties of these two groups will be eliminated. One, however, C. P. 36/105 has indicated yield qualities statistically equivalent to those of C. P. 34/120. It is possible that other important competitors of C. P. 34/120 may be found among the group of thirty-one varieties.

In plant can tests (table 2) C. P. 35/14 and C. P. 36/62 surpassed C. P. 28/19 in indicated yield of sugar per acre and proved fully equal to the latter in available sugar content. These varieties are, in addition, much more satisfactory than C. P. 28/19 for mechanical harvesting. In preliminary tests, however, (results not included in this report) C. P. 35/14 and especially C. P. 36/62 have displayed relatively poor stubbling qualities. An accurate appraisal of the relative merits of these two varieties in comparison with C. P. 28/19 under a representative range of conditions is not possible at this time, but in view of the current importance of mechanical harvesting, results obtained so far are considered of special interest. C. P. 36/19, another seedling of relatively high sugar content, proved distinctly superior to C. P. 28/19 in indicated yield of sugar per acre in plant cane tests (table 2).

2Brandes, E. W., Taggart, W. G., and Kemper, W. C. Release of new sugarcane varieties. Sugar Bulletin, V. 21, No. 19, page 1, July 1, 1943.

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Tests on Heavy Soils

In plant cane and first stubble tests on heavy soils (tables 6 and 7) C. P. 34/120 surpassed all other varieties in indicated yield of sugar per acre and was consistently among the highest of the group in indicated yield of sugar per ton of cane. It is considered significant that, in the average of plant cane and first stubble crops, C. P. 34/120 surpassed Co. 290 and C. P. 29/116 by substantial margins. It also maintained a distinct advantage over both varieties in indicated yield of sugar per ton of cane. C. P. 807, 28/11, 29/103, 31/509, 33/372, 33/409 and 34/139, other varieties included in these tests, gave in nearly all cases average yields of sugar per acre below those from C. P. 34/120. It is of interest to note however that in two of the first stubble tests C. P. 31/509 was slightly above C. P. 34/120 in indicated yield of sugar per acre though consistently below the latter in indicated yield of sugar per tone of cane.

In the average of second stubble tests (table 8) C. P. 29/120 proved slightly superior to Co. 290 and C. P. 29/116 in indicated yield of sugar per acre, and consistently maintained an advantage over both varieties in indicated yield of sugar per ton of cane. C. P. 807, 28/11 and 29/103 gave average indicated yields of sugar per acre below yields from either C. P. 29/116 or Co. 290. No comparisons are available between C. P. 29/120 and C. P. 34/120 in this series of tests.

TABLE 5—Results of second stubble preliminary variety tests on light soils in Louisiana during 1943.

Variety	Greenwood (Thibodaux) 10-18[1]	Godchaux (Raceland) 10-20	Albania (Jeanerette) 10-25	Alma (Lakeland) 10-28	Average
Average yield of cane per acre (tons)					
*Co. 281	12.9	14.4	6.5	14.4	12.05
C. P. 31/509	39.3	30.8	15.3	37.6	30.75
C. P. 31/529	23.9	15.6	14.8	34.3	22.15
C. P. 32/206	27.6	26.5	10.8	30.4	23.82
C. P. 33/224	11.6	13.2	2.4	6.0	8.30
*C. P. 33/243	18.7	21.7	12.1	16.7	17.30
C. P. 33/372	30.8	30.1	18.1	30.4	27.35
C. P. 33/409	24.4	24.0	12.4	29.5	22.57
C. P. 34/1	42.0	26.5	21.7	30.5	30.17
C. P. 34/21	21.9	27.3	15.6	33.3	24.52
C. P. 34/77	2.4	5.6	0.8	16.5	6.32
C. P. 34/79	14.9	17.9	4.9	24.7	15.60
C. P. 34/80	21.9	22.4	3.6	22.3	17.55
*C. P. 34/120	26.1	39.9	19.6	34.1	29.92
Difference					
For P.=.05	6.12	5.21	3.88	8.37	6.60
For P.=.01	8.27	7.04	5.28	11.31	8.83
Average indicated yield of 96° sugar per ton of cane (pounds)					
Co. 281	144.8	148.9	191.7	173.8	161.0
C. P. 31/509	130.5	130.4	174.8	145.1	140.5
C. P. 31/529	139.4	122.6	171.4	160.9	150.1
C. P. 32/206	156.1	165.3	201.0	176.6	170.3
C. P. 33/224	137.2	138.9	177.6	163.1	145.4
C. P. 33/243	149.0	138.3	193.7	186.7	162.5
C. P. 33/372	137.0	135.5	178.0	151.8	147.5
C. P. 33/409	154.4	138.4	184.6	180.2	162.7
C. P. 34/1	134.5	129.0	160.4	168.4	146.5
C. P. 34/21	142.8	142.5	173.3	171.8	157.4
C. P. 34/77	139.3	119.7	167.3	164.0	195.7
C. P. 34/79	174.0	174.5	201.1	200.0	186.5
C. P. 34/80	124.2	144.5	149.7	188.3	152.4
C. P. 34/120	157.2	164.6	199.4	172.7	171.0
Difference					
For P.=.05	18.31	21.58	22.20	16.24	13.03[2]
For P.=.01	24.75	29.16	30.17	21.97	17.43
Average indicated yield of 96° sugar per acre (pounds)					
Co. 281	1868	2144	1246	2503	1940
C. P. 31/509	5129	4016	2674	5456	4319
C. P. 31/529	3332	1913	2537	5519	3325
C. P. 32/206	4308	4380	2171	5369	4057
C. P. 33/224	1592	1833	426	979	1207
C. P. 33/243	2786	3001	2344	3118	2812
C. P. 33/372	4220	4079	3222	4615	4034
C. P. 33/409	3767	3322	2289	5316	3673
C. P. 34/1	5649	3418	3481	5136	4421
C. P. 34/21	3127	3890	2703	5721	3860
C. P. 34/77	334	670	134	2706	1237
C. P. 34/79	2593	3124	985	4940	2910
C. P. 34/80	2720	3237	539	4199	2674
C. P. 34/120	4103	6568	3908	5889	5117
Difference					
For P.=.05	983	894	761	1493	1088[2]
For P.=.01	1328	1209	1035	2018	1455

[1] Date of harvest.
[2] Experimental error based on Location x Variety interaction term.
* Varieties grown commercially.

Tests on Muck Soils

Table 9 summarizes results of variety tests on muck soil during 1943. Confirming results of previous tests C. P. 28/19 again proved the most satisfactory one of the released varieties in point of sugar content—an advantage considered of prime importance under prevailing conditions of high soil fertility. Because of its

TABLE 6—Results of plant cane variety tests on heavy soils in Louisiana during 1943.

Variety	Greenwood (Thibodaux) 11-25[1]	Oaklawn (Franklin) 11-18	Alma (Lakeland) 11-23	Average
Average yield of cane per acre (tons)				
*Co. 290	27.4	14.1	18.9	20.13
*C. P. 807	18.1	11.6	15.7	15.13
*C. P. 29/103	20.4	16.4	22.8	19.87
*C. P. 29/116	23.4	19.1	23.4	21.97
C. P. 31/509	25.6	22.8	22.7	23.70
C. P. 33/372	17.6	20.6	18.0	18.73
C. P. 33/409	19.1	20.0	21.7	20.27
*C. P. 34/120	27.4	23.3	23.4	24.70
C. P. 34/139	29.9	20.3	25.2	25.13
Difference				
For P.=.05	5.82	4.26	4.82	2.80[2]
For P.=.01	7.89	5.78	6.53	3.72
Average indicated yield of 96° sugar per ton of cane (pounds)				
Co. 290	163.9	185.2	172.0	171.4
C. P. 807	161.3	189.7	165.1	169.9
C. P. 29/103	189.8	199.3	189.2	192.1
C. P. 29/116	149.5	180.5	174.9	167.5
C. P. 31/509	159.4	186.9	164.4	169.8
C. P. 33/372	151.3	175.9	151.2	160.3
C. P. 33/409	152.5	183.1	156.5	164.0
C. P. 34/120	186.2	188.2	170.8	182.0
C. P. 34/139	141.7	173.3	148.2	152.4
Difference				
For P.=.05	11.53	14.94	16.50	8.13[2]
For P.=.01	15.62	20.24	22.36	10.80
Average indicated yield of 96° sugar per acre (pounds)				
Co. 290	4491	2611	3251	3451
C. P. 807	2920	2201	2592	2571
C. P. 29/103	3872	3269	4314	3818
C. P. 29/116	3498	3448	4093	3680
C. P. 31/509	4081	4261	3732	4025
C. P. 33/372	2663	3624	2722	3003
C. P. 33/409	2913	3662	3396	3324
C. P. 34/120	5102	4385	3997	4495
C. P. 34/139	4237	3518	3735	3830
Difference				
For P.=.05	1026	836	873	508[2]
For P.=.01	1390	1133	1183	675

[1] Date of harvest.
[2] Experimental error based on generalized error term for the 3 experiments.
* Varieties grown commercially.

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TABLE 7—Results of first stubble variety tests on heavy soils in Louisiana during 1943.

Variety	Greenwood (Thibodaux) 11-25[1]	Oaklawn (Franklin) 11-11	Alma (Lakeland) 11-23	Station (Houma) 11-23	Average
Average yield of cane per acre (tons)					
*Co. 290	38.8	22.8	34.8	27.4	30.95
*C. P. 807	30.1	15.7	20.6	22.1	22.12
*C. P. 28/11	36.6	16.1	33.8	25.3	27.95
*C. P. 29/103	25.7	14.8	34.2	24.5	24.80
*C. P. 29/116	36.7	20.0	47.1	28.4	33.05
C. P. 31/509	43.3	27.5	32.7	26.1	32.40
C. P. 33/372	32.4	24.5	29.9	26.2	28.25
C. P. 33/409	31.4	23.3	31.4	24.4	27.62
*C. P. 34/120	41.3	24.0	41.2	29.1	33.90
Difference					
For P.=.05	4.76	5.50	6.24	4.58	1.47[2]
For P.=.01	6.45	7.52	8.46	6.15	1.94
Average indicated yield of 96° sugar per ton of cane (pounds)					
Co. 290	162.8	185.8	170.7	196.0	176.6
C. P. 807	183.6	203.7	176.0	191.6	187.4
C. P. 28/11	187.9	209.1	192.0	209.0	196.9
C. P. 29/103	186.4	199.1	194.7	181.0	189.8
C. P. 29/116	149.1	195.8	170.7	198.2	174.4
C. P. 31/509	186.0	177.2	171.4	190.5	181.4
C. P. 33/372	179.1	175.1	171.9	185.2	177.7
C. P. 33/409	182.8	187.3	173.7	197.3	184.4
C. P. 34/120	191.1	183.1	186.4	206.2	191.5
Difference					
For P.=.05	14.07	11.86	14.74	12.33	6.33[2]
For P.=.01	19.12	16.08	19.98	16.54	8.38
Average indicated yield of 96° sugar per acre (pounds)					
Co. 290	6317	4236	5940	5370	5466
C. P. 807	5526	3198	3626	4234	4146
C. P. 28/11	6877	3367	6490	5288	5504
C. P. 29/103	4790	2947	6659	4434	4707
C. P. 29/116	5472	3916	8040	5629	5764
C. P. 31/509	8054	4873	5605	4972	5876
C. P. 33/372	5803	4290	5140	4852	5021
C. P. 33/409	5740	4364	5454	4814	5093
C. P. 34/120	7892	4394	7680	6000	6491
Difference					
For P.=.05	987	1096	1226	947	329[2]
For P.=.01	1337	1485	1661	1270	436

[1] Date of harvest.
[2] Experimental error based on generalized error term for the 4 experiments.
* Varieties grown commercially.

TABLE 8—Results of second stubble variety tests on heavy soils in Louisiana during 1943.

Variety	Oaklawn (Franklin) 11-11[1]	Alma (Lakeland) 10-28	Station (Houma) 10-29	Average
Average yield of cane per acre (tons)				
Co. 290	19.6	16.5	27.6	21.23
C. P. 807	14.5	6.4	14.8	11.90
C. P. 28/11	14.4	17.6	17.6	16.53
C. P. 29/103	3.8	18.3	8.8	10.30
C. P. 29/116	15.4	22.3	22.1	19.93
C. P. 29/120	18.4	20.4	22.7	20.50
Difference				
For P.=.05	8.17	7.44	4.23	2.73[2]
For P.=.01	11.34	10.29	5.77	3.64
Average indicated yield of 96° sugar per ton of cane (pounds)				
Co. 290	180.5	175.8	185.7	181.6
C. P. 807	194.4	163.2	163.7	176.0
C. P. 28/11	193.1	192.1	196.4	194.0
C. P. 29/103	205.3	194.1	177.3	190.7
C. P. 29/116	181.0	180.5	185.1	182.3
C. P. 29/120	184.2	198.6	196.7	193.6
Difference				
For P.=.05	19.71	17.99	12.53	8.66[2]
For P.=.01	27.36	24.97	17.08	11.55
Average indicated yield of 96° sugar per acre (pounds)				
Co. 290	3538	2901	5125	3855
C. P. 807	2819	1044	2423	2095
C. P. 28/11	2781	3381	3457	3206
C. P. 29/103	780	3552	1560	1964
C. P. 29/116	2787	4025	4091	3634
C. P. 29/120	3389	4051	4465	3968
Difference				
For P.=.05	1579	1396	814	528[2]
For P.=.01	2191	1930	1110	704

[1] Date of harvest.
[2] Experimental error based on generalized error term for the 4 experiments.

susceptibility to severe lodging under such conditions, however, this variety cannot be harvested very satisfactorily by machinery and its replacement by one of more satisfactory growth habit is considered highly desirable.

Of the varieties extensively tested C. P. 33/253 is probably the one showing the most satisfactory com-

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bination of productivity, growth habit and reasonably satisfactory level of sugar content. In plant cane and first stubble tests C. P. 34/120 and 34/53 gave relatively high indicated yields of sugar per acre and maintained reasonably satisfactory levels of sugar content. Among the more recent introductions, in tests on muck soil, C. P. 35/14 and 36/62 showed notable promise in plant cane tests.

TABLE 9—Results of variety tests on muck soil at Clovelly Farms during 1943

Variety	Plant Cane 11-30[1]			First Stubble 11-30			Second Stubble 11-3		
	Av. yield of cane per acre (Tons)	Av. indicated yield of 96° sugar		Av. yield of cane per acre (Tons)	Av. indicated yield of 96° sugar		Av. yield of cane per acre (Tons)	Av. indicated yield of 96° sugar	
		Per ton of cane (Pounds)	Per acre (Pounds)		Per ton of cane (Pounds)	Per acre (Pounds)		Per ton of cane (Pounds)	Per acre (Pounds)
*Co. 281	17.7	169.4	2,998	29.3	189.4	5,549	11.2	153.9	1,724
*C. P. 28/19	19.6	216.2	4,238	28.4	221.3	6,285	13.4	195.9	2,625
*C. P. 29/320	25.2	183.4	4,622	29.3	203.0	5,948	25.2	168.8	4,254
*C. P. 33/243				32.9	184.2	6,060	26.6	169.4	4,506
C. P. 33/253	24.4	197.6	4,821	32.8	189.1	6,202	27.9	170.2	4,749
C. P. 34/79							16.2	184.7	2,992
*C. P. 33/310	23.2	176.4	4,092						
C. P. 34/53	27.4	183.3	5,022	35.6	189.1	6,732			
C. P. 34/92	24.9	166.3	4,141	36.9	184.6	6,812			
*C. P. 34/120	27.2	172.0	4,678	41.7	189.1	7,883			
C. P. 34/139				39.8	149.0	5,930			
C. P. 35/14	24.6	205.9	5,065						
C. P. 36/56	26.1	163.3	4,262						
C. P. 36/62	26.4	202.5	5,346						
C. P. 36/70	18.1	174.5	3,158						
C. P. 36/75	25.4	170.4	4,328						
C. P. 36/85	32.6	167.6	5,464						
C. P. 36/191	27.2	176.4	4,798	28.5	175.1	4,990			
C. P. 36/193				30.1	193.9	5,836			
C. P. 36/194				29.4	176.1	5,177			
C. P. 36/195				30.4	162.9	4,952			
C. P. 36/196				29.0	174.3	5,055			
C. P. 36/197				37.1	180.7	6,704			
C. P. 34/167				30.9	151.1	4,669			
Difference									
For P.=.05	6.80			6.71	15.13	1,317	4.72	11.65	853
For P.=.01	9.19			8.97	20.20	1,759	6.44	15.89	1164

[1] Date of harvest.
* Varieties grown commercially.

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Sugar Cane Test Field Report Season of 1943

By C. B. Gouaux
Mechanical College, Agricultural Experiment Louisiana State University and Agricultural and Stations, W. G. Taggart, Director

Sugar cane variety work at the eight test fields of the Louisiana Experiment Station during the season of 1943, consisted of nine fall plant cane fields; nine first stubble fields and seven second stubble fields. The field yield data and juice analyses of test field sugar cane varieties were obtained during the regular harvest and milling season, or the last three months of 1943. Facilities for weighting variety plots; for making big mill tests; and for the laboratory work in connection with the analyses of samples of juices, were all provided by our test field test field cooperators. That the sugar cane variety work of the test fields is of extreme value to the various localities of the sugar belt, is clearly indicated by the amount of interest and consideration shown under the serious and acute labor shortages and intricate problems that existed throughout our second year of sugar production under World War II conditions.

Fall Planting of Test Fields.

The fall plantings of test fields for the 1944 season were made during the period of September 16 to October 20, 1943, at the eight test field locations.

Main plot varieties: (Cinclare, Glenwood, Reserve, Shirley and Meeker) C. P. Nos. 29-120, 29-320, 31-509, 33-425, 33-243, 34-92, 34-115, 34-120, 34-139, 36-80, 36-105, 36-161, 36-183 and 36-191.

Cinclare (Sharkey): C. P. Nos. 29-116, 34-21, 34-92, 34-120 and 34-139.

Main plot varieties: (Sterling, Billeaud and Youngsville) Co. 290, C. P. Nos. 29-116, 29-120, 31-509, 33-310, 33-224, 33-243, 34-92, 34-115, 34-120, 34-139 34-143, 36-80, 36-105, 36-111, 36-161, 36-183 and 36-191.

Introductory varieties: (introduced at the eight test fields) C. P. Nos. 36-13, 36-160, 36-179, 37-5 and F. 31-762.

Evaluation and Tabulation of Results.

The data for the twenty-five sugar cane variety test fields for the season of 1943, are presented in tables Nos. 1 to 8 inclusive. These tables have six uniform headings, which are as follows: (1) Variety; (2) Normal Juice; (3) Tons per Acre; (4) Value Per Ton; (5) Less $1 Per Ton (harvesting expense); and (6) Balance Per Acre.

The "Balance" column figures show the actual ranking of varieties; starting with the highest and ending with the lowest in money value per acre. The "Loui-

TABLE 1—Cinclare Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yazoo)								
C. P. 33-243	14.77	11.86	80.30	34.98	$3.83	$133.97	$34.98	$98.99
C. P. 34-120	14.82	12.29	82.93	33.97	3.83	130.11	33.97	96.14
C. P. 31-503	14.57	11.10	76.18	35.68	3.52	125.59	35.68	89.91
C. P. 34-115	14.19	11.12	78.37	33.40	3.54	118.24	33.40	84.84
C. P. 36-75	15.16	11.69	77.11	29.07	3.83	111.34	29.07	82.27
C. P. 29-120	15.59	12.73	81.65	25.85	3.92	101.33	25.85	75.48
C. P. 29-103	15.93	12.70	79.72	25.45	3.91	99.51	25.45	74.06
C. P. 36-55	14.91	11.81	79.21	26.16	3.83	100.19	26.16	74.03
C. P. 34-92	14.72	11.15	75.75	28.65	3.56	101.99	28.65	73.34
C. P. 29-320	15.83	12.75	80.54	24.67	3.93	96.95	24.67	72.28
C. P. 36-161	14.03	10.15	72.34	31.73	2.80	88.84	31.73	57.11
C. P. 34-139	13.99	9.87	70.55	33.89	2.58	87.44	33.89	53.55
C. P. 31-551	14.87	11.10	74.65	19.19	3.52	67.55	19.19	48.36
Fall Plant Cane (Sharkey)								
C. P. 34-21	15.21	12.28	80.74	17.54	3.83	67.18	17.54	49.64
C. P. 33-224	13.70	11.38	83.07	18.05	3.74	67.51	18.05	49.46
C. P. 34-120	14.53	11.51	79.22	17.08	3.83	65.42	17.08	48.34
C. P. 29-116	13.47	10.48	77.80	15.25	3.05	46.51	15.25	31.26
C. P. 33-409	14.83	11.55	77.88	8.92	3.83	34.16	8.92	25.24
C. P. 31-529	12.89	10.20	79.13	11.23	2.83	31.78	11.23	20.55
C. P. 34-1	13.08	9.64	73.70	8.05	2.41	19.40	8.05	11.35
First Stubble (Yazoo)								
C. P. 34-120	15.98	12.45	77.91	29.66	3.83	113.60	29.66	83.94
C. P. 34-21	15.41	11.28	73.20	26.50	3.66	96.99	26.50	70.49
C. P. 36-85	14.50	10.48	72.28	30.90	3.05	94.25	30.90	63.35
C. P. 33-372	15.89	11.73	73.82	22.31	3.83	85.45	22.31	63.14
C. P. 34-115	14.31	11.06	77.29	23.50	3.49	82.02	23.50	58.52
C. P. 34-92	14.17	10.36	73.11	28.17	2.96	83.38	28.17	55.21
C. P. 33-425	16.86	13.32	79.00	17.58	4.14	72.78	17.58	55.20
C. P. 36-55	14.99	11.81	78.79	19.06	3.83	73.00	19.06	53.94
C. P. 33-243	15.60	12.46	79.87	18.62	3.83	71.31	18.62	52.69
C. P. 28-19	16.32	12.91	79.11	16.27	3.99	64.92	16.27	48.65
C. P. 34-139	14.31	10.21	71.35	18.02	2.84	51.18	18.02	33.16
C. P. 29-320	15.54	12.07	77.67	11.38	3.83	43.59	11.38	32.21
First Stubble (Sharkey)								
C. P. 34-120	15.79	11.85	75.05	22.87	3.83	87.59	22.87	64.72
C. P. 33-224	15.46	11.62	75.16	21.98	3.83	84.18	21.98	62.20
C. P. 34-21	15.50	11.79	76.06	21.58	3.83	82.65	21.58	61.07
C. P. 33-409	16.53	12.66	76.59	16.16	3.89	62.86	16.16	46.70
C. P. 29-116	15.70	11.56	73.63	15.51	3.83	59.40	15.51	43.89
C. P. 34-1	15.75	10.75	68.25	15.83	3.26	51.61	15.83	35.78
C. P. 33-372	15.31	10.71	69.95	13.87	3.22	44.66	13.87	30.79
Second Stubble (Yazoo)								
C. P. 33-243	15.83	12.60	79.60	20.82	3.87	80.57	20.82	59.75
C. P. 34-120	15.75	12.26	77.84	20.67	3.83	79.17	20.67	58.50
C. P. 33-310	15.78	11.27	71.42	20.34	3.65	74.24	20.34	53.90
C. P. 29-120	16.46	12.62	76.67	18.16	3.88	70.46	18.16	52.30
C. P. 29-320	15.98	13.06	81.73	15.70	4.04	63.43	15.70	47.73
C. P. 28-19	16.38	12.89	78.69	14.00	3.98	55.72	14.00	41.72
C. P. 29-103	17.19	13.39	77.31	5.67	4.13	23.42	5.67	17.75

NOTES

Fall Plant Cane (Yazoo & Sharkey): Planted September 28, 1942 and harvested November 30, 1943.

First Stubble (Yazoo & Sharkey): Planted September 18, 1941. Harvesting dates: November 18, 1942, and October 28, 1943.

Second Stubble (Yazoo): Planted September 18, 1940. Harvesting dates: November 19, 1941, October 21, 1942 and October 28, 1943.

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TABLE 2—Glenwood Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yazoo)								
C. P. 36-191	17.12	13.70	80.00	37.58	$4.29	$161.22	$37.58	$123.64
C. P. 34-120	15.88	12.18	76.70	32.71	3.83	125.28	32.71	92.57
C. P. 31-509	15.40	11.31	73.44	33.43	3.68	123.02	33.43	89.59
C. P. 36-55	16.20	12.06	74.44	31.13	3.83	119.23	31.13	88.10
C. P. 36-105	15.69	11.60	73.93	29.38	3.83	112.53	29.38	83.15
C. P. 36-161	14.97	10.68	71.34	36.20	3.20	115.84	36.20	79.64
C. P. 33-243	15.17	11.69	77.06	27.78	3.83	106.40	27.78	78.62
C. P. 34-92	15.49	11.12	71.79	30.55	3.54	108.15	30.55	77.60
C. P. 29-103	17.36	13.04	75.12	24.30	4.04	98.17	24.30	73.87
C. P. 36-185	14.97	10.97	73.28	29.87	3.42	102.16	29.87	72.29
C. P. 29-120	15.61	12.09	77.45	25.02	3.83	95.83	25.02	70.81
C. P. 34-139	14.92	10.17	68.16	36.56	2.81	102.73	36.56	66.17
C. P. 34-115	14.35	10.65	74.27	29.63	3.18	94.22	29.63	64.59
C. P. 34-151	15.40	10.66	69.22	28.21	3.19	89.99	28.21	61.78
C. P. 28-19	15.59	13.05	83.71	18.82	4.04	76.03	18.82	57.21
F. 31-962	17.61	14.41	81.83	14.52	4.56	66.21	14.52	51.69
First Stubble (Yazoo)								
C. P. 31-509	16.20	12.33	76.11	29.78	3.83	114.40	29.78	84.53
C. P. 34-120	14.76	11.31	76.63	30.35	3.68	111.69	30.35	81.34
C. P. 34-115	15.99	11.48	71.79	27.43	3.81	104.51	27.43	77.08
C. P. 36-85	14.91	11.03	73.98	28.75	3.47	99.76	28.75	71.01
C. P. 33-425	16.36	13.15	80.38	22.42	4.08	91.47	22.42	69.05
C. P. 34-21	15.57	11.64	74.76	24.33	3.83	93.18	24.33	68.85
C. P. 33-372	15.08	11.47	76.06	22.54	3.81	85.88	22.54	63.34
C. P. 36-75	14.76	11.31	76.63	22.38	3.68	82.36	22.38	59.98
C. P. 36-62	16.48	13.26	80.46	19.16	4.12	78.94	19.16	59.78
C. P. 36-70	14.82	10.96	73.95	24.64	3.42	84.27	24.64	59.63
C. P. 36-55	15.91	12.47	78.38	20.80	3.83	79.66	20.80	58.86
C. P. 33-485	16.59	12.55	75.65	20.14	3.85	77.54	20.14	57.40
C. P. 34-86	16.00	10.84	67.75	24.56	3.32	81.54	24.56	56.98
F. 31-962	15.68	12.56	80.10	19.78	3.85	76.15	19.78	56.37
C. P. 33-409	15.63	12.19	77.99	18.92	3.83	72.46	18.92	53.54
C. P. 34-143	14.85	11.11	74.81	21.15	3.53	74.66	21.15	53.51
C. P. 34-92	14.86	10.42	70.12	26.60	3.00	79.80	26.60	53.20
C. P. 28-19	16.68	13.49	80.88	16.02	4.21	67.44	16.02	51.42
C. P. 33-243	14.27	10.29	72.11	25.89	2.90	75.08	25.89	49.19
First Stubble (Sharkey)								
C. P. 34-1	15.13	10.97	72.50	18.54	3.42	63.41	18.54	44.87
C. P. 31-529	16.56	12.54	75.72	14.50	3.85	55.83	14.50	41.33
C. P. 33-409	16.20	12.38	76.42	14.16	3.83	54.23	14.16	40.07
Second Stubble (Yazoo)								
C. P. 34-120	16.59	11.47	69.14	21.40	3.81	81.53	21.40	60.13
C. P. 33-310	16.29	11.97	73.48	19.85	3.83	76.03	19.85	56.18
C. P. 29-320	16.30	12.82	78.65	17.83	3.95	70.43	17.83	52.60
C. P. 29-120	15.52	12.02	77.45	16.34	3.83	62.58	16.34	46.24
C. P. 33-243	15.72	12.51	79.58	15.75	3.83	60.32	15.75	44.57
C. P. 29-103	16.85	12.25	72.70	15.06	3.83	57.68	15.06	42.62
C. P. 28-19	17.01	13.63	80.13	10.48	4.26	44.64	10.48	34.16
C. P. 33-425	16.30	12.62	77.42	10.60	3.88	41.13	10.60	30.53
C. P. 34-139	15.17	10.63	70.07	15.33	3.16	48.44	15.33	33.11

NOTES

Fall Plant Cane (Yazoo): Planted September 30, 1942, and harvested November 19, 1943.

First Stubble (Yazoo and Sharkey): Planted September 19, 1941. Harvesting dates: November 19, 1942, and October 22, 1943.

Second Stubble (Yazoo): Planted October 2, 1940. Harvesting dates: November 20, 1941, October 29, 1942, and October 22, 1943.

Three first stubble varieties classified as salvage cane, giving the following results:

Variety	Normal Juice Sucrose	Tons Per Acre
C. P. 31-551	8.93	23.43
C. P. 36-19	9.15	24.37
C. P. 34-139	9.40	25.36

TABLE 3—Reserve Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yazoo)								
C. P. 36-191	15.77	11.74	74.45	45.30	$3.83	$173.50	$45.30	$128.20
C. P. 34-120	15.27	11.72	75.76	35.53	3.83	136.08	35.53	100.55
C. P. 36-183	15.62	11.72	75.03	35.42	3.83	135.66	35.42	100.24
C. P. 34-92	16.01	11.70	73.08	33.22	3.83	127.23	33.22	94.01
C. P. 29-120	15.77	12.72	80.66	32.05	3.91	125.32	32.05	93.27
C. P. 36-55	16.27	12.11	74.43	31.11	3.83	119.15	31.11	88.04
C. P. 36-161	15.38	10.89	70.81	36.73	3.36	123.41	36.73	86.68
C. P. 29-103	16.55	12.61	76.19	29.77	3.87	115.21	29.77	85.44
C. P. 28-19	18.68	15.61	83.57	21.14	5.02	106.12	21.14	84.98
C. P. 36-185	15.47	11.38	73.56	30.60	3.74	114.44	30.60	83.84
C. P. 38-18	16.67	12.87	77.20	27.29	3.97	108.34	27.29	81.05
C. P. 31-509	15.93	11.77	73.89	28.01	3.83	107.28	28.01	79.27
C. P. 32-206	16.79	12.79	76.18	26.01	3.94	102.48	26.01	76.47
C. P. 36-75	16.16	12.28	75.99	26.70	3.83	102.26	26.70	75.56
C. P. 34-53	16.13	12.25	75.95	26.21	3.83	100.38	26.21	74.17
C. P. 34-115	14.44	10.69	74.03	32.78	3.21	105.22	32.78	72.44
C. P. 34-151	15.27	11.31	74.07	36.77	2.92	107.37	36.77	70.60
C. P. 34-139	14.05	9.79	69.68	38.31	2.52	96.54	38.31	58.23

TABLE 3—Reserve Test Fields (Continued)

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
First Stubble (Yazoo)								
C. P. 33-425	17.71	14.64	82.67	26.92	4.65	125.18	26.92	98.26
C. P. 33-485	16.79	13.09	77.96	30.30	4.06	123.02	30.30	92.72
C. P. 34-21	16.06	12.30	76.59	32.69	3.83	125.20	32.69	92.51
C. P. 34-92	16.19	11.52	71.16	32.63	3.83	124.97	32.63	92.34
C. P. 34-120	15.01	11.38	75.82	33.58	3.74	125.59	33.58	92.01
C. P. 36-70	15.72	11.84	75.32	30.75	3.83	117.77	30.75	87.02
C. P. 36-19	16.58	13.00	78.41	28.80	4.02	115.78	28.80	86.98
C. P. 36-75	15.35	11.42	74.40	30.60	3.77	115.36	30.60	84.76
C. P. 36-55	16.59	12.56	75.71	29.65	3.85	114.15	29.65	84.50
C. P. 33-243	15.42	11.98	77.69	29.54	3.83	113.14	29.54	83.60
C. P. 33-372	16.47	12.09	73.41	28.97	3.83	110.96	28.97	81.99
C. P. 34-53	16.01	11.74	73.33	28.60	3.83	109.54	28.60	80.94
C. P. 34-143	15.83	11.65	73.59	28.52	3.83	109.23	28.52	80.71
C. P. 33-409	15.95	12.61	79.06	26.88	3.87	104.03	26.88	77.15
C. P. 36-17	15.91	11.47	72.09	26.44	3.81	100.74	26.44	74.30
C. P. 36-62	16.14	12.63	78.25	24.62	3.88	95.53	24.62	70.91
C. P. 31-551	15.31	11.01	71.91	27.54	3.45	95.01	27.54	67.47
F. 31-962	16.98	12.21	71.91	23.73	3.83	90.89	23.73	67.16
C. P. 31-509	15.08	10.48	69.50	29.00	3.05	88.45	29.00	59.45
C. P. 28-19	14.83	10.92	73.63	23.58	3.39	79.94	23.58	56.36
Second Stubble (Yazoo)								
C. P. 34-120	16.19	12.50	77.21	30.62	3.83	117.27	30.62	86.65
C. P. 29-120	16.89	13.27	78.57	25.44	4.12	104.81	25.44	79.37
C. P. 28-19	17.05	13.36	78.36	24.20	4.16	100.67	24.20	76.47
C. P. 34-1	15.91	12.00	75.42	26.19	3.83	100.31	26.19	74.12
C. P. 33-372	16.69	12.25	73.40	25.15	3.83	96.32	25.15	71.17
C. P. 29-103	16.33	11.63	71.22	25.00	3.83	95.75	25.00	70.75
C. P. 34-79	17.11	13.83	80.83	20.35	4.34	88.32	20.35	67.92
C. P. 34-21	16.11	11.98	74.36	23.42	3.83	89.70	23.42	66.28
C. P. 33-243	15.62	12.28	78.62	23.25	3.83	89.05	23.25	65.80
C. P. 29-320	16.50	12.77	77.39	21.78	3.93	85.60	21.78	63.82

NOTES

Fall Plant Cane (Yazoo): Planted September 15, 1942, and harvested November 18, 1943.

First Stubble (Yazoo): Planted October 1, 1941. Harvesting dates: November 20, 1942, and November 17, 1943.

Second Stubble (Yazoo): Planted September 19, 1940. Harvesting dates: November 27, 1941, October 30, 1942, and November 17, 1943.

TABLE 4—Meeker Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yahola)								
C. P. 34-120	17.16	13.79	80.36	34.85	$4.32	$150.55	$34.85	$115.70
C. P. 36-55	16.18	12.16	75.15	37.64	3.83	144.16	37.64	106.52
C. P. 36-185	15.79	11.29	71.50	39.87	3.67	146.32	39.87	106.45
C. P. 34-92	16.77	11.48	68.46	36.95	3.81	140.78	36.95	103.83
C. P. 33-425	16.87	14.51	86.01	27.62	4.60	127.05	27.62	99.43
C. P. 38-18	15.56	11.42	73.39	35.63	3.77	134.33	35.63	98.70
C. P. 36-75	15.01	11.35	75.62	36.06	3.72	134.14	36.06	98.08
C. P. 33-243	16.57	13.50	81.47	28.43	4.21	119.69	28.43	91.26
C. P. 29-320	17.45	13.88	79.54	24.57	4.36	107.13	24.57	82.56
C. P. 36-191	15.11	10.02	66.31	44.16	2.70	119.23	44.16	75.07
C. P. 36-161	15.11	9.88	65.39	47.50	2.59	123.03	47.50	75.53
First Stubble (Yahola)								
C. P. 34-92	15.40	12.21	79.29	51.72	3.83	198.09	51.72	146.37
C. P. 34-79	16.67	13.71	82.24	44.29	4.29	190.00	44.29	145.71
C. P. 34-120	15.70	12.29	78.28	48.60	3.83	186.14	48.60	137.54
C. P. 34-21	15.60	12.96	83.08	43.43	4.01	174.15	43.43	130.72
C. P. 33-372	15.89	11.29	71.05	47.32	3.67	173.66	47.32	126.34
C. P. 36-19	16.28	12.66	77.76	43.54	3.89	169.37	43.54	125.83
C. P. 29-320	16.96	13.84	81.60	34.64	4.34	150.34	34.64	115.70
C. P. 33-310	16.96	12.92	76.18	36.00	3.99	143.64	36.00	107.64
C. P. 33-253	15.31	11.58	75.64	37.50	3.83	143.63	37.50	106.13
C. P. 33-243	15.11	11.88	78.62	37.23	3.83	142.59	37.23	105.36
C. P. 36-55	15.21	11.24	73.90	41.21	2.86	117.86	41.21	76.65
C. P. 36-75	15.21	11.27	74.10	40.35	2.89	116.61	40.35	76.26
C. P. 33-425	16.57	13.46	81.23	20.27	4.20	85.13	20.27	64.86
Second Stubble (Yahola)								
C. P. 34-120	15.21	12.23	80.41	37.04	3.83	141.86	37.04	104.82
C. P. 33-310	16.77	12.79	76.27	35.08	3.94	138.22	35.08	103.14
C. P. 28-19	17.74	14.70	82.86	25.86	4.67	120.77	25.86	94.91
C. P. 34-21	14.72	11.89	80.77	33.09	3.83	126.73	33.09	93.64
C. P. 29-320	16.77	13.37	79.73	25.35	4.16	105.46	25.35	80.11
C. P. 33-243	15.40	12.79	83.05	26.70	3.94	105.20	26.70	78.50
C. P. 33-425	17.16	12.92	75.29	24.74	3.99	98.71	24.74	73.97

NOTES

Fall Plant (Yahola): Planted October 6, 1942, and harvested December 15, 1943. Heap rows of the following varieties were completely frozen by the hard freeze of December 16, with minimum temperature of 19 degrees F. : C. P. Nos. 34-92, 36-55, 36-75, 36-161, 36-185, 36-191 and 38-18. These canes were milled and tested at the Meeker Factor during the afternoon of December 16, after they had thawed out. The other four varieties, C. P. Nos. 29-320, 33-243, 33-425 and 34-120, were milled and tested during the afternoon of December 15, before the freeze.

First Stubble (Yahola): Planted October 14, 1941. Harvesting dates: December 2, 1942, and November 5, 1943. C. P. 34-115 and C. P. 34-139 were in the salvage cane bracket; 9.12% sucrose, 44.31 tons per acre and 7.70% sucrose, 46.50 tons per acre, respectively.

Second Stubble (Yahola): Planted October 10, 1940. Harvesting dates: November 15, 1941, November 3, 1942, and December 5, 1943.

TABLE 5—Shirley Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Yahola)								
C. P. 34-120	15.26	11.18	73.26	42.20	$3.58	$151.08	$42.20	$108.88
C. P. 33-243	15.65	12.22	78.08	34.48	3.83	132.06	34.48	97.58
C. P. 36-55	15.26	11.13	72.94	38.11	3.55	135.29	38.11	97.18
C. P. 28-19	15.84	12.21	77.08	32.67	3.83	125.13	32.67	92.46
C. P. 36-19	16.43	12.87	78.33	30.40	3.97	120.69	30.40	90.29
C. P. 33-425	16.33	12.64	77.40	31.30	3.88	121.44	31.30	90.14
C. P. 29-320	15.84	12.32	77.78	31.30	3.83	119.88	31.30	88.58
F. 31-962	16.53	13.47	81.49	27.22	4.20	114.32	27.22	87.10
C. P. 36-105	14.67	10.44	71.17	41.74	3.02	126.05	41.74	84.31
C. P. 34-92	14.67	10.00	68.17	40.38	2.68	108.22	40.38	67.84
C. P. 36-191	14.28	9.64	67.51	44.61	2.41	107.51	44.61	62.90
C. P. 34-53	14.57	9.95	68.29	34.98	2.64	92.35	34.98	57.37
C. P. 36-17	15.06	9.91	65.80	34.03	2.61	88.82	34.03	54.79
C. P. 36-185	14.08	9.59	68.11	39.47	2.37	93.54	39.47	54.07
First Stubble (Yahola)								
C. P. 34-120	15.84	11.98	75.63	49.18	3.83	188.36	49.18	139.18
C. P. 36-55	15.84	12.15	76.70	43.74	3.83	167.52	43.74	123.78
C. P. 29-320	16.14	12.42	76.95	40.11	3.83	153.62	40.11	113.51
C. P. 33-243	16.43	13.35	81.25	33.30	4.16	138.53	33.30	105.23
C. P. 33-310	15.75	11.14	70.73	40.56	3.55	143.99	40.56	103.43
C. P. 33-253	16.33	12.96	79.36	33.30	3.84	127.87	33.30	94.57
C. P. 36-17	16.14	11.88	73.61	32.40	3.83	124.09	32.40	91.69
C. P. 33-425	17.90	15.09	84.30	23.59	4.82	113.70	23.59	90.11
C. P. 28-19	17.02	13.55	79.61	24.05	4.23	101.73	24.05	77.68
Second Stubble (Yahola)								
C. P. 33-243	16.53	13.76	83.24	34.58	4.31	149.04	34.58	114.46
C. P. 29-320	17.21	14.53	84.43	29.22	4.61	134.70	29.22	105.48
C. P. 34-120	17.21	14.06	81.70	30.13	4.43	133.48	30.13	103.35
C. P. 29-120	17.12	13.89	81.13	27.68	4.36	120.68	27.68	93.00
C. P. 33-310	15.94	12.22	76.66	30.40	3.83	116.43	30.40	86.03
C. P. 33-425	18.00	15.17	84.28	20.60	4.85	99.91	20.60	79.31
C. P. 29-103	17.90	14.25	79.61	21.50	4.50	96.75	21.50	75.25
C. P. 28-19	18.58	15.96	85.90	17.24	5.16	88.96	17.24	71.72

NOTES

Fall Plant Cane (Yahola): Planted September 22, 1942, and harvested Deeember 4, 1943. C. P. 34-139 was salvage cane, with sucrose of 6.45% and field yield of 41.74 tons per acre.

First Stubble (Yahola): Planted September 29, 1941. Harvesting dates: November 23, 1942, and November 9, 1943. C. P. 34-139 was salvage eane, with 8.98% sucrose and 38.10 tons per aere.

Second Stubble (Yahola): Planted September 27, 1940. Harvesting dates: Deeember 3, 1941, November 5, 1942, and November 8, 1943.

TABLE 6—Sterling Test Fields

Variety	Crop Age	Normal Juice			Acidity
		Brix	Sucrose	Purity	
Co. 290	Fall Plant Cane	15.01	11.46	76.35	3.6
C. P. 29-116	Fall Plant Cane	14.35	10.45	72.82	3.7
C. P. 33-243	Fall Plant Cane	15.47	13.00	84.03	1.9
C. P. 34-120	Fall Plant Cane	16.03	12.02	74.98	3.2
C. P. 34-139	Fall Plant Cane	15.01	11.44	76.22	2.3
C. P. 29-103	Fall Plant Cane	17.34	14.40	83.04	1.8
C. P. 34-120	First Stubble	15.56	12.55	80.66	2.4
C. P. 34-143	First Stubble	16.22	13.56	83.60	1.9
C. P. 36-105	First Stubble	15.84	12.91	81.50	1.9
C. P. 29-120	Second Stubble	16.59	13.61	82.04	1.9

NOTES

The above analyses were made from five stalk samples by the Oaklawn Factory laboratory, through the eourtesy of M. L. Marquette, Manager, Southcoast Corporation, Franklin, Louisiana. The ten samples were taken by the writer on January 5, 1944.

The final results of the three "Sterling Test Fields" were not obtained on account of labor shortage.

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TABLE 7—Billeaud Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Lintonia)								
C. P. 34-21	17.06	14.39	84.35	30.00	$4.55	$136.50	$30.00	$106.50
C. P. 33-310	18.53	15.53	83.81	26.61	4.99	132.78	26.61	106.17
C. P. 33-243	17.45	14.81	84.87	26.79	4.71	126.18	26.79	99.39
Co. 290	17.65	13.56	76.83	30.25	4.24	128.26	30.25	98.01
C. P. 36-75	18.14	15.47	85.28	24.63	4.97	122.41	24.63	97.78
C. P. 36-19	18.14	15.17	83.63	25.18	4.85	122.12	25.18	96.94
C. P. 34-115	17.65	14.58	82.61	26.24	4.63	121.49	26.24	95.25
C. P. 34-120	17.55	14.49	82.56	26.05	4.59	119.57	26.05	93.52
C. P. 29-116	16.77	12.32	73.46	32.35	3.83	123.90	32.35	91.55
C. P. 31-509	16.67	13.35	80.08	28.58	4.16	118.89	28.58	90.31
C. P. 34-92	17.45	13.09	75.01	27.53	4.06	111.77	27.53	84.24
C. P. 36-55	17.75	14.15	79.72	23.22	4.46	103.56	23.22	80.34
C. P. 33-409	18.04	14.97	82.98	20.00	4.78	95.60	20.00	75.60
C. P. 34-139	16.48	11.95	72.51	23.89	3.83	91.50	23.89	67.61
First Stubble (Lintonia)								
C. P. 31-509	17.34	14.38	82.93	29.65	4.55	134.91	29.65	105.26
C. P. 34-120	17.27	14.22	82.34	29.85	4.49	134.03	29.85	104.18
C. P. 36-19	17.64	14.61	82.82	28.38	4.64	131.68	28.38	103.30
C. P. 33-243	16.97	14.10	83.09	29.16	4.44	129.47	29.16	100.31
C. P. 34-1	17.36	14.19	81.74	27.41	4.48	122.80	27.41	95.39
C. P. 29-116	16.10	11.99	74.47	32.70	3.83	125.24	32.70	92.54
C. P. 34-21	16.55	13.22	79.88	29.21	4.11	120.05	29.21	90.84
C. P. 34-92	16.19	12.73	78.63	30.76	3.92	120.58	30.76	89.82
C. P. 36-55	16.16	13.25	81.99	27.95	4.12	115.15	27.95	87.20
C. P. 34-139	17.24	13.48	78.19	27.16	4.21	114.34	27.16	87.18
C. P. 33-310	18.64	15.05	80.74	22.85	4.81	109.91	22.85	87.06
Co. 290	15.67	11.98	76.45	30.33	3.83	116.16	30.33	85.83
C. P. 33-372	17.36	13.87	79.90	25.20	4.35	109.62	25.20	84.42
C. P. 33-224	16.39	12.73	77.67	27.65	3.92	108.39	27.65	80.74
C. P. 33-425	18.84	16.29	86.46	17.90	5.28	94.51	17.90	76.61
C. P. 36-17	16.10	12.58	78.14	25.42	3.86	98.12	25.42	72.70
C. P. 33-409	17.93	15.04	83.88	15.34	4.80	73.63	15.34	58.29

NOTES

Fall Plant Cane (Lintonia): Planted September 24, 1942, and harvested December 5, 1943.

First Stubble (Lintonia): Planted October 7, 1941. Harvesting dates: November 28, 1942, and November 5, 1943.

TABLE 8—Youngsville Test Fields

Variety	Normal Juice			Tons Per Acre	Value		Less $1.00 Harvest	Balance
	Brix	Sucrose	Purity		Ton	Acre		
Fall Plant Cane (Olivier)								
C. P. 33-224	16.44	12.29	74.76	23.74	$3.83	$143.24	$23.74	$105.84
C. P. 36-161	17.67	14.11	79.85	26.67	4.45	118.68	26.67	92.01
C. P. 34-92	18.53	15.34	82.78	21.68	4.92	106.67	21.68	84.99
C. P. 36-55	18.24	14.91	81.74	22.19	4.75	105.40	22.19	83.21
C. P. 31-551	17.48	14.19	81.18	22.97	4.48	102.91	22.97	79.94
C. P. 36-185	17.58	13.91	79.12	21.96	4.37	95.97	21.96	74.01
C. P. 34-1	17.01	12.82	75.37	24.97	3.95	98.63	24.97	73.66
C. P. 34-53	18.24	15.00	82.24	19.23	4.79	92.11	19.23	72.88
C. P. 34-120	17.48	13.75	78.66	21.94	4.31	94.56	21.94	72.62
C. P. 33-409	18.53	15.70	84.73	17.80	5.06	90.07	17.80	72.27
C. P. 34-151	17.96	13.77	76.67	19.43	4.32	83.94	19.43	64.51
C. P. 33-310*	17.48	14.19	81.18	------	------	------	------	------
Co. 290*	17.10	13.39	78.30	------	------	------	------	------
C. P. 29-116*	16.06	11.46	71.36	------	------	------	------	------
C. P. 34-139	15.30	12.36	80.78	21.74	3.83	83.26	21.74	61.52
First Stubble (Olivier)								
C. P. 34-120	16.63	12.95	77.87	31.55	4.00	126.20	31.55	94.65
Co. 290	15.49	11.64	75.15	32.10	3.83	122.94	32.10	90.84
C. P. 29-116	15.77	11.28	71.53	31.40	3.83	120.26	31.40	88.86
C. P. 33-310	17.39	12.85	73.89	28.05	3.96	111.08	28.05	83.03
C. P. 29-283	15.68	10.86	69.26	29.65	3.34	99.03	29.65	69.38
C. P. 33-224	16.44	12.54	76.28	24.00	3.85	92.40	24.00	68.40
C. P. 33-372	15.96	12.13	76.00	24.10	3.83	92.30	24.10	68.20
C. P. 33-409	16.44	12.60	76.64	21.70	3.87	83.98	21.70	62.28
C. P. 33-425	16.72	13.37	79.96	18.65	4.16	77.58	18.65	58.93
C. P. 34-139	15.30	10.22	66.80	29.50	2.85	84.08	29.50	54.58
C. P. 34-21**	14.16	9.77	69.00	28.15	2.50	70.38	28.15	42.23
Second Stubble (Olivier)								
C. P. 29-120	17.29	13.99	80.91	20.83	4.40	91.65	20.83	70.82
C. P. 34-120	16.63	13.14	79.04	22.96	4.08	93.68	22.96	70.72
C. P. 33-310	17.01	12.72	74.78	24.07	3.91	94.11	24.07	70.04
Co. 290	15.96	12.19	76.38	21.57	3.83	82.61	21.57	61.04
C. P. 29-116	15.48	11.46	74.03	15.88	3.80	60.34	15.88	44.46

NOTES

Fall Plant Cane Olivier): Planted September 25, 1942, and harvested December 10, 1943. (*) Field data of three varieties lost on account of unfavorable weather and labor conditions. All varieties cut with Thornton Harvester; plaeed on three-row plot heaps and burned. Weighed and tested December 12-14.

First Stubble (Olivier): Planted October 6, 1941. Harvesting dates: December 4, 1942, and November 11, 1943. All varieties except C. P. 34-21, cut with Thornton Cane Harvester; placed on three-row heaps and burned. (**) Cut by hand.

Second Stubble (Olivier): Planted September 26, 1940. Harvesting dates: November 17, 1941, November 7, 1942, and November 11, 1943. Harvested with Thornton Cane Harvester.

siana Sugar Cane Contract," which is in general use for purchasing cane by the raw sugar houses of the state was used for obtaining comparative data and information in connection with field and milling results and the actual value of varieties. In all of the calculations, a basis of 11½ to 12½ per cent sucrose in normal juice was used for standard cane; a cost figure of $1.00 per ton for harvesting expenses; and an average par price of $3.83 per ton of standard cane. The latter figure is the same as in 1942, and represents the average par price of weekly 96 test raw sugar quotations for the period of October 14, 1943, through March 23, 1944, according to the *Sugar and Rice Exchange* and the *Cane Products Trade Association Inc.*, of New Orleans, Louisiana.

Summary of Results—Season of 1943.

The data presented in tables Nos. 1 to 8, on the performance of commercial and unreleased sugar cane varieties at the eight test fields of the Louisiana Experiment Station is for the season of 1943.

C. P. 34-120, a commercial variety released in the fall of 1942, was the outstanding cane; showing excellent performance on Yazoo and Sharkey soils at Cinclare; Yazoo soil at Glenwood and Reserve, and also at the test fields of the Red River and western sections of the cane belt. It performed well as plant cane, first and second stubble and showed good adaptation to all of the various soil types.

The variety C. P. 33-243 showed up best at the following test fields: Cinclare, Shirley, Meeker and Billeaud. In these test field areas it responded well on the light, fertile and better drained land, and can be used on a more profitable basis than varieties like C. P. Nos. 29-103 and 29-120.

C. P. 29-120 shows definite superiority over C. P. 29-103 at Cinclare, Glenwood and Reserve.

The average plant cane and first stubble results of the Billeaud test field indicate that seven of the leading varieties ranked in the following order: (1) C. P. 33-243; (2) C. P. 34-120; (3) C. P. 34-21; (4) C. P. 31-509; (5) C. P. 33-310; (6) C. P. 29-116, and (7) Co. 290.

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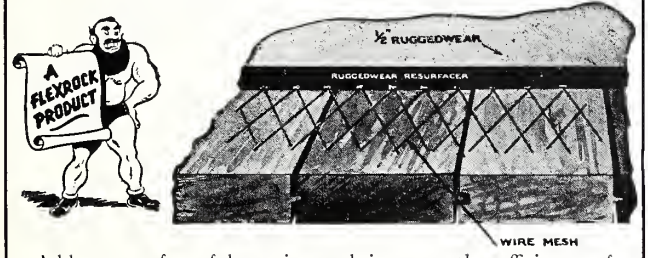

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TABLE B—Minimum Temperatures at the Test Fields Season of 1943 (January, February, March, November and December) Expressed in Degrees Fahrenheit

Date	Cinclare	Napoleonville	Reserve	Cheneyville	Franklin	Broussard
1/9	31	----	----	27	----	29
1/19	28	31	----	19	33	27
1/20	22	22	25	19	24	23
1/21	29	30	25	28	31	29
1/27	28	30	31	29	30	27
1/28	31	30	30	26	32	31
1/29	32	33	30	26	32	----
2/11	31	31	30	28	----	29
2/12	29	28	31	31	----	31
2/15	28	30	30	25	31	29
2/17	31	30	31	32	----	----
2/27	32	32	----	30	----	----
3/3	24	25	26	21	26	23
3/4	24	24	26	23	27	30
3/7	29	31	33	27	32	29
3/8	31	33	34	30	35	32
11/11	30	31	36	32	35	33
11/12	32	32	37	31	36	35
11/18	30	30	34	31	35	36
11/19	32	30	34	32	34	38
11/25	32	32	38	29	37	34
11/30	31	32	39	28	34	32
12/1	31	----	36	36	39	----
12/16	20	22	25	18	23	22
12/17	23	24	26	21	27	22
12/18	24	25	27	21	27	25
12/19	27	25	27	27	30	27
12/20	30	21	29	36	33	32
12/31	32	31	32	33	34	33

NOTES

The minimum temperature data of Cinclare, Reserve, Cheneyville and Franklin were taken from the "Climatological Data," U. S. Department of Commerce, Weather Bureau, New Orleans Louisiana. The other two locations were from plantation records, as follows: Elm Hall Plantation, Napoleonville, Louisiana, and Billeaud Sugar Factory, Broussard, Louisiana.

Commercial varieties that are more widely used in the respective test field localities, like C. P. Nos. 28-19 and 29-320 in the Mississippi riverand Red River sections; and Co. 290 and C. P. 29-116 in the Teche and western areas, are used as the basis for relative evaluation of the performance of varieties at the test fields. Both C. P. Nos. 28-19 and 29-320 in the majority of the tests are outclassed by C. P. Nos. 34-120, 33-243 and 29-120; besides being outranked in many cases by unreleased varieties. This greatly emphasizes the importance, particularly of C. P. Nos. 34-120 and 29-120; and also of C. P. 33-243 on light well-drained fertile

TABLE A—Rainfall at the Test Fields—Season of 1943.

Location	Jan.		Feb.		March		April		May		June		July		August		Sept.		October		Nov.		Dec.		Total	
	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.	days	Ins.
Cinclare	6	2.70	8	3.05	9	11.53	4	1.05	6	3.60	12	6.65	11	2.65	3	2.04	9	12.55	2	0.28	2	4.55	9	8.24	81	58.89
Napoleonville	4	2.58	3	1.19	7	12.57	6	3.61	7	3.75	7	6.73	6	3.06	7	4.62	11	19.02	0	0.00	3	2.40	5	4.44	66	63.97
Reserve	7	2.54	3	1.35	9	8.26	7	2.04	6	2.44	14	7.73	13	9.94	6	4.62	13	13.14	3	1.13	4	3.01	8	6.44	93	62.64
Franklin	7	2.64	4	2.01	10	12.48	6	1.83	7	4.35	12	6.23	12	6.13	10	7.66	11	25.40	2	0.97	2	1.90	10	5.76	92	77.36
Cheneyville	5	4.09	4	2.50	7	5.87	3	3.80	6	5.54	10	6.90	10	2.56	6	2.11	11	7.48	3	1.49	5	5.45	7	4.90	77	52.69
Meeker	5	4.39	5	3.02	9	5.29	3	5.10	8	4.09	8	6.27	9	5.22	5	2.56	9	7.59	2	1.88	5	8.66	6	3.99	74	58.06
Broussard	3	3.08	3	2.05	8	7.82	6	3.22	6	2.99	6	4.61	6	5.80	5	2.88	7	12.74	2	1.23	2	3.68	11	6.98	65	57.08
Youngsville	7	4.17	3	1.34	10	7.90	4	2.33	5	4.20	10	2.12	9	4.72	4	3.58	8	12.61	2	1.36	2	3.17	6	6.14	69	53.64

NOTES

The rainfall data of Cinclare, Reserve, Franklin and Cheneyville were taken from the "Climatological Data" of the U. S. Department of Commerce. Weather Bureau, New Orleans, Louisiana. The data for Napoleonville, Meeker, Broussard and Youngsville are from the records of test field cooperators.

soils; and should enhance their value as better commercial canes in the test field areas where they have given the best response.

When C. P. 34-120 is used as the yardstick or standard of comparison, there is no unreleased variety at the test fields in 1943 that can compare favorably with this cane.

The following varieties are fairly promising: C. P. Nos. 31-509, 34-21, 34-92, 34-115, 36-19, 36-85 and 36-105. In these seven canes, C. P. Nos. 36-19, 34-92, and 36-105 are the most desirable, especially on account of their particular adaptation to mechanical harvesters. C. P. Nos. 31-509 and 34-21 are good enough for commercial purposes, but are definitely undesirable for mechanical harvesters. C. P. 34-21 made a fine showing on Cinclare Sharkey soil, and additional data is to be obtained on plant cane and first stubble next season.

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Louisiana (Mill Reports) Production of Sugars, Sirup, Molasses and Tons of Cane Ground—1935-1943

	1935	1936	1937	1938	1939	1940	1941	1942	1943
Raw Sugar 96°	244,208	257,710	291,313	396,955	356,166	177,021	252,176	305,802	316,719
Clarified Raw Value	15,284	18,254	18,172	11,161	8,423	1,294	2,731	4,233	17,402
Turbinados	13,757	12,661	21,367	27,022	23,345	16,373	25,425	25,889	34,262
Granulated	57,037	82,236	55,235	47,590	45,145	37,464	31,991	51,182	60,663
Washed Raws	3,809	2,782	3,094	122	939	1,236	7,776	8,694	0
String—Others	6,797	9,870	10,934	5,781	2,844	1,407	2,144	2,529	2,924
Sirup—Gallons	1,902,955	2,078,011	1,454,108	1,531,000	1,824,127	1,567,318	1,705,220	1,802,624	4,458,137
1st Molasses	2,463,309	2,461,463	1,809,692	2,256,616	1,896,291	1,224,042	2,142,987	3,301,640	5,936,230
2nd Molasses	2,227,996	2,491,480	2,052,608	1,720,463	3,214,954	1,481,536	2,734,639	4,420,460	4,754,073
Blackstrap	20,818,081	27,712,266	29,902,333	34,379,122	27,891,109	15,384,342	21,560,072	23,103,373	30,887,281
Total Sugars	340,892	383,513	400,115	488,631	436,862	239,095	322,243	398,330	431,970
Tons of Cane Ground	4,179,645	4,942,525	5,295,268	5,909,846	5,128,321	2,978,516	4,021,903	4,791,134	5,546,129

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Official Release

(Puerto Rican Sugarcane Fair-Price Determination

The War Food Administration recently announced the basis for determining minimum prices to be paid for the 1943-44 Puerto Rican sugarcane crop by processors who, as producers, apply for payments under the Sugar Act of 1937.

The price determination again requires millers to pay for purchased sugarcane not less than 63 percent of the f.o.b. mill value of the sugar recovered from cane yielding less than 12 per cent of sugar, and not less than 65 percent for cane yielding 12 percent or more. The only change from last year's determination is that the producer-processor will be required to pay the grower a molasses bonus equal to one-half of the net proceeds per gallon of blackstrap molasses in excess of 4 cents per gallon. Substantially the same provision was contained in the 1941-42 determination.

Since the war began, domestic sugarcane growers generally have requested that the increased income from the sale of blackstrap molasses resulting from the war be shared between them and processors, and provision was first made in the case of the 1941-42 sugarcane crop in Louisiana and Florida for a grower molasses bonus equal to one-half of the excess, if any, of the average price per gallon of blackstrap molasses above the former returns.

In adopting this principle the War Food Administration recognized the historic practice of the sugar industry of permitting retention by the processors of the normal income from blackstrap molasses but viewed the increased income from the sale of the by-product in wartime above prewar price levels as properly subject to division between the two factors in the industry. Consequently, a provision for grower participation in such increased income from the sale of blackstrap molasses was included in the price determination for the 1941-42 Puerto Rican crop. It was eliminated, however, from the 1942-43 price determination because the intense enemy submarine activity in the Caribbean and a shortage of tankers prevented the transportation of molasses to the continental United States.

As a result of the improved shipping situation and the great demand for blackstrap as a source of alcohol for war purposes, it appears reasonably certain that all of the island's 1944 crop molasses not consumed by insular distillers or by other local users will be shipped to the mainland where a high price prevails. The Defense Supplies Corporation has offered to purchase Puerto Rican blackstrap at f. o. b. prices of 13.975 cents per gallon. On that basis, the net return will probably be about 12 or 13 cents per gallon, as compared with a 3 to 5 cents prewar level.

The price determination for the 1943-44 crop in Puerto Rico again permits full deduction of shipping and selling expenses from the New York market price of raw sugar in fixing the price basis of settlement for sugarcane, subject to the requirement that a statement by a certified public accountant be furnished. The present determination also continues the provision that any reimbursement of such expenses by any governmental agency must be taken into consideration in arriving at the final f. o. b. mill basis used for settlement purposes.

When settlement with the grower is made by the delivery of sugar, the producer-processor is required to (1) store and insure such sugar free of charge to the grower until the end of the calendar year 1944 (except in those instances in which outside storage facilities are utilized, in which case the grower is to bear its proportionate share of the charges for such storage), and (2) to share with the grower all ocean shipping facilities available to the producer-processor.

The sugar Act of 1937 requires as one of the conditions for payment that processors who, as producers, apply for conditional payments, pay for purchased sugarcane at rates not less than those determined to be fair and reasonable, after investigation and public hearing. The hearing was held in San Juan, Puerto Rico on November 12 and 13, 1943.

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against foreign Competition

Vol. 22 NEW ORLEANS, LA., JULY 1, 1944 No. 19

Extracts from the Remarks of C. J. Bourg Before the Meeting of The Louisiana Sugar Producers Clubs in New Orleans, June 22, 1944

Future Needs

"There are really two controlling amendments to the Sugar Act to be considered for the future as essential to the progress and prosperity of the Louisiana sugar industry. The one determines the volume of production, and the other determines the volume of income. We need more quota and we need a fair price. Speaking in the light of experience and with the best judgment of which I am capable, I want to recommend that we approach these two objectives with broad vision. The fact that the Philippines have been removed as a source of supply for 1,000,000 tons of sugar annually emphasizes the possibility of obtaining a better quota by the indirect method of stimulating greater consumption of sugar in the United States and possibly in other countries of the world. Louisiana has been restricted in its quota, because the supply of sugar from all normal sources is greater than the consumption of sugar in the United States. If we were able to increase the uses of sugar in the World sufficiently, there eventually comes a time when getting a bigger quota for Louisiana may not mean taking a quota away from somebody else. By the same token, if the people of Asia and the Islands of the Pacific were encouraged to consume sugar anywhere near in the same quantity as United States consumers, there would be no necessity for sugar from the Philippines being sent 7,000 miles to find a market.

Price of Cane

"The more recent and immediately important discussions have centered around the CCC incentive payment. In 1943 no incentive payment had been planned for sugarcane, although programs for sugar beets and other crops were announced in the spring. As sugarcane had been planted several months earlier it seemed legally impossible to justify a program, until the League's demands brought about an announcement just a few weeks before the harvest. This announcement offered 33c per ton on the 1943 crop and 85c per ton on the 1944 crop. When the plantings for 1944 failed to show an improvement, the League took the position that the incentive offered was not sufficient. Accordingly we have insisted upon an improvement of the amount of the incentive on the 1944 crop and a substantial increase on the 1945 crop to be announced this summer before the crop is planted. Because Congress had placed some limitations on subsidies in a Bill just passed this week, there has been some delay in the announcement of the programs. The League does not yet have definite commitments and it is impossible for me to tell you the exact prospects for the price of sugarcane this year or next year. I can give you these figures:

$3.83	from processor on sugar value
.32	from processor on molasses value
1.30	conditional payment under Sugar Act
.85	incentive payment from CCC
Total: $6.30	

"This $6.30 is the minimum which growers may expect to obtain on the 1944 crop. Our negotia-

THE
SUGAR BULLETIN

414 Whitney Bldg., New Orleans 12

Marcel J. Voorhies, Editor

Issued on the 1st and 15th of each month. Official Organ of the American Sugar Cane League of the U. S. A.

In which are consolidated

The Louisiana Sugar Planters' Assn.
The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.

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In This Issue

Extracts from the Remarks of C. J. Bourg before the Meeting of The Louisiana Sugar Producers Clubs in New Orleans, June 22, 1944 ..... Cover

Report of the Priorities Committee..... 176

Report of Stream Pollution Committee.... 179

tions indicate that there is a possibility of improving that price to $6.60 on the 1944 crop in which case the 1945 crop would probably bring a total of $6.85. Should the grower receive the $6.30 minimum on the 1944 crop, then the prospect would be that the grower could receive as much as $7.15 per ton of cane for the 1945 crop.

Machinery

"Last grinding season when the problems of saving the crop were multiplied each day, the mechanical harvester finally accounted for more than one-third of the sugarcane harvested. Ordinarily farm machinery depends entirely for use upon the salesmanship of the distributor. In the case of harvesters the regulations of Government had been established on the historical background of production in 1941, which meant that less than 50 new harvesters could be authorized. So the League went into action. For each manufacturer a case had to be made in justification of a request for a bigger allotment. Finally after the county agent, the Parish War Board, the State War Board and the WFA had presented supporting statements, the presentation was made to the proper officials in WPB covering the needs of all sugarcane growers and all manufacturers of harvesters. What I have told you in two minutes took several months of constant pressure to bring about. No other organization has accomplished its purpose so thoroughly and for the good and advantage of all persons engaged in the industry. The harvester benefitted not only the owner but all growers, because it released laborers to cut cane for others."

"Currently, we have found that necessity is again proving the mother of invention in connection with cane loaders. We face the same situation as with harvesters. We are entering upon this task with the same thoroughness and it is the purpose of the League to bring about as satisfactory results.

Overton Sponsors Research

"Sugarcane machinery has to be specially designed. This means that the great manufacturers of farm machinery have not been attracted to this heavy equipment primarily because the market is relatively small and very much localized. In order to overcome that disadvantage we have succeeded in obtaining the interest of agricultural engineers in the Federal Government. Senator Overton, cooperating with the League, was successful in having an engineer assigned to make a special study of the mechanical requirements in sugarcane culture and we were able to bring about the personal visit of the Chief of the Bureau of Agricultural Engineering to Louisiana during the grinding season. As a result, at the request of Senator Overton a project was prepared and presented by the Department of Agriculture carrying an appropriation of $40,000.00 for research work on all types of sugarcane machinery, including harvesters, loaders, dusting machines, flame cultivators, windrowing machines and other equipment, including low-cost machines for small growers.

Labor Problems

"May I ask each one of you to think exclusively in terms of your own farm. Your biggest headache has been labor. The scarcity of labor and the inefficiency of those you have been able to hire, has given you more worry than any other problem. Each of you has sought to solve your individual problem in your own way, but last year a very considerable tonnage of sugarcane was lost because of labor short-

age; given adequate labor supply the freeze of December 16th would not have caused the loss of any cane. So the League, thinking in terms of the industry as a whole and looking to accomplish the greatest good for all sugarcane growers whether members of our organization or not, has been looking into the distant future. We do not know what the post-war period holds, but through the successful efforts of Senator Overton we are assured of the assistance of Government engineers to study the needs and requirements of the industry in labor-saving devices. It may be years before all of the benefits will become real, but we can at least offer you the security of knowing that the League and qualified experts are looking forward to anticipate remedies for your troubles. The industry must mechanize to become more efficient.

"Those of you who received the help of war prisoners in saving your crop, know how important that additional source of labor supply proved to be. Did you realize the hundreds of contacts made by every conceivable means of communication with Washington, with Dallas, with San Antonio, with Camp Livingston, with Camp Polk, with the War Manpower Commission, with the WFA, with the State Director of Extension, with County Agents and local committees in Louisiana? All of that was done under the sponsorship and the organized effort of the American Sugar Cane League. We will do it all over again this grinding.

Fertilizer

"In connection with your needs for fertilizer, there again was a situation where individual growers were about to be deprived of the use of the type or quality of fertilizer required for sugarcane, except in some small proportion. I have been told by officials in Washington that the organized effort and the assistance offered by the American Sugar Cane League with respect to fertilizer is an outstanding example of effective organization and cooperation. We not only helped cane growers but we helped the farmers of North Louisiana and of Mississippi, who are in the same agricultural area in the sense of fertilizer requirements.

Critical War Materials

"The work of the Priority Committee has helped the industry in spite of itself. The half-hearted willingness of some of our members to furnish information has forced the Priority Committee to resort to estimates of what each processor would need in certain materials, and then to produce an estimated total for the industry. Through this organized effort we have obtained the good will and the cooperation of officials of the WFA, who in turn have championed our cause within Government circles. Many of our members have been able to obtain supplies and equipment because of this work although very few of them know it. The case of chain slings is an outstanding example.

"It would be possible to go on much further and enumerate what has been done in specific instances like securing high-lug tires for your tractors, but the examples already mentioned are sufficient to stimulate a more complete appreciation for the organization which thinks about your problems of today and tomorrow, because you are a part of the industry.

"The desire and the necessity for winning the war are paramount in our minds today. All Americans agree on that proposition. For correct thinking we must make a distinction between the methods of the battle line and the methods of the home front.

"Military objectives have to be gained by military methods, which means destruction—physical destruction of whatever stands in the way of victory. Ruthlessness is something to be avoided, even in war, if possible, yet that extreme may be resorted to in the face of military necessity.

Government Controls

"The economic and social controls on the home front needed to support the military, are also justifiable as war measures. We do *not* have to adopt methods of casting aside freely the constitutional forms and the democratic processes which have been fundamental to our progress, and to the success of the American way of life. By the same reasoning, the regimentation of war times should be released *promptly* after Peace has been declared.

"All of us desire to avoid inflation, just as much as all of us desire to achieve victory. We are willing to adjust ourselves, provided that the adjustments are based upon uniformity of treatment, and that such adjustments are *temporarily* applied for the duration of the emergency. Fundamentally, it is not good Government procedure to solve all problems by *purchase*. Subsidies may be unavoidable in wartime, but subsidies can be overdone *even* in war time. It is perhaps best to apply our thinking not so much to whether we should seek or accept subsidies during the emergency, but to try to foresee what will be the *road back* to normal living over which all of us must travel. In the case of sugar, the price to the consumers has been held to an average of 6.8 cents per pound in the United States. Certainly buying sugar at 7c a pound is a very cheap price from the standpoint of the consumer, who pays much higher prices for any other important daily food. On the other hand, the Government has refunded to refiners their extraordinary costs of transportation and distribution, and to growers their increased cost of production. These refunds have made it possible to keep the price of sugar lower to the consumer. Nobody wants any run-away price of 25c or 30c, as followed World War I, but some day the taxpayer will begin talking to himself as a consumer to find out whether a reasonable price for sugar at retail wouldn't be the best solution for all. The American standard of living is something a good citizen does not object to pay for, provided he understands.

"Sugarcane growers have been under Government control since 1934—a limited control with the limitations specified by law. Perhaps the very nature of the supply and demand situation of sugar creates a need for some control because less than one-third of our consumption is supplied from continental production. As a close student of the problems of our industry, I have been convinced that quota control is much more efficient than tariff alone. Tariff seeks to control price through free competition. Quotas may be turned on or off as definitely as a faucet. It is my conclusion, after discussing the subject with representative men from each of the producing areas which supply sugar to the United States market, that a tariff supplemented by quotas is the best plan by which equality of treatment may be obtained. Naturally, the League will continue to demand the preference and priority to which domestic producers are entitled. Quotas are now suspended, but some day we will get back on a quota basis, and the fight will start again for an adequate quota.

Maintain Standards of Living

"In connection with this subject, which is basic to any full consideration, I have a further recommendation to make very seriously. Speaking as a citizen of Louisiana and looking to the general welfare of our communities, our cities, and our State, the wisest course for the sugar industry to pursue is to seek a price or return from the sale of its products which will permit the maintenance of the established wage scales. Let us not devote our energies to reducing the return to labor, until we have exhausted every hope and possibility of obtaining a return to the producer which will permit him to pay the higher wage and still have a reasonable profit on his whole operation.

"Unemployment is expected to be the major problem of re-adjustment in the postwar period. I agree with those industrialists who state that unemployment must not become the problem of industry; as it is properly the problem of Government. The Government can more easily and more successfully eliminate unemployment by permitting industry to operate profitably. When a business man can feel assured of a profitable return from his investment and his efforts, he more readily increases the number of his employees and their pay. Without assurance that he can entertain the profit motive, the business man (whether he is a farmer, or a manufacturer, or a storekeeper) becomes cautious and, accordingly, less inclined to pay a living wage within the American standards of living.

Program of League

"Therefore, let's fight for a sugar price that can justifiably be charged the consumer and at the same time permits a profit to the producer of sugar. Let the sugar tax remain to raise funds by means of which the grower will receive conditional payments to compensate him for the reduction in tariff. The system of benefit payments takes care of the adjustment that prevents foreign producers from profiting unduly at the expense of the American consumer. The conditional payment becomes the direct means of maintaining the American standard of living in our own communities, with a fair share for the farmer, the processor and the laborer.

"Let us decide upon a production goal that will be possible to attain year in and year out. Presently our factory capacity is fairly well frozen by WPB regulations and priorities on new equipment and new construction. Under these difficulties let us continue to produce up to capacity in war times and a grateful Nation will be more receptive to our reasonable claims for a generous share of the American market for the sugarcane growers and sugar producers of Louisiana."

Report of Priorities Committee

The following communications are self explanatory:

May 10, 1944.

Mr. Clarence J. Bourg,
American Sugar Cane League,
510 Union Trust Building,
Washington, D. C.

Dear Clarence:

Your letter of April 28th attaching release to processors from WPA—Office of Materials and Facilities—was called to the attention of our Priorities Committee and they suggested that I write you in order to attempt to clarify, if possible, points 4, 6, and 7 which they think afford the farmers more latitude in securing their requirements than might at first be reflected from the release.

The paper states under item:

(4) "For lumber or copper wire requirements, consult the AAA County Rationing Committee."

Order M-208 covering soft-wood lumber permits the use of Rating AA-3 under List B for:
(2) Maintenance or repair of farm buildings other than dwellings.
Under List C priority rating AA-4 is permitted when lumber is physically incorporated into:
(ii) Agricultural implements, and agricultural machinery, parts, accessories and equipment.
(vi) Industrial machinery, parts, accessories and equipment, and engine and batteries.
and when used for construction of:
(ii) Buildings and structures required for storage of agricultural products produced, by farmers, planters, ranchmen, dairymen, or nut or fruit growers.
(iii) Shelters, barns, pens and sheds for livestock or poultry and agricultural fences and gates.
(3) Maintenance or repair of dwellings.
(See comment under item 6 for copper).

(6) "If a repair job is sent to a repair shop, the repair man may obtain the materials required for the job under CMP Regulations 9A."
In addition, under CMP Regulation 9A, paragraph 3175.9a, the regulation states:
(a) *What repair men can buy materials and parts under this regulation?* Anyone in the business of making repairs may buy materials and parts under this regulation. This includes such persons as *farm machinery repair shops, blacksmiths shops,* electricians, radio repair shops, plumbers, refrigeration repair shops, boiler repair shops, motor rewinders, electrical contractors, automotive repair, upholstery repair shops, bicycle repair shops and carpenters. It also includes *repair shops which are owned by the persons for whom the repair work is done if that person can segregate the purchases of his repair shop from his other purchases.* It also includes persons who recondition or rebuild damaged or used items for resale.
(b) *How much materials a repairer can buy?* Each calendar quarter a repairman may buy, under this regulation, up to 20 tons of carbon and alloy steel, a total of 500 pounds of copper and copper base alloy brass mill and foundry products, and 200 pounds of aluminum in the forms listed in Schedule I.

Please note the clause "also includes repair shops which are *owned by the persons for whom the repair work is done* if that person can segregate the purchases of his repair shop from his other purchases." Certainly that applies to *farm blacksmiths shops* and we are confident that our farmers keep their purchases and supplies separate and can comply with this part of the regulation. This will permit them

to purchase 20 tons of carbon and alloy steel, brass, some copper and aluminum, and permit them to use *perference rating AA-3 with CMP allotment symbol V-3*, (this applies to each calender quarter), over the following certificates:

V-3—AA-3

The undersigned purchaser certifies, subject to the penalties of section 35 (a) of the United States Criminal Code, to the seller and to the War Production Board, that, to the best of his knowledge and belief, the undersigned is authorized under applicable War Production Board regulations or orders to place this delivery order, to receive the items ordered for the purpose for which ordered, and to use any preference rating or allotment number or symbol which the undersigned has placed on this order.

(Signed):

The release further states:

(7) "For *repairs* to farm buildings in excess of the $1,000.00 limitation ($200.00 to any single dwelling house) in any year, under Order L-41, permission is required and application should be made on Form WPB-617."

WPB limitation, order L-41 refers to *construction* which means putting up or altering any sort of a structure, including a building, road, bridge, dam, etc., also the installing of equipment or fixtures, and placing a limit for all jobs begun in the same year, as follows:

(1) $200 for a house, including the entire residential property.
(This means you could build as many as 5 cabins costing $200 each).

(2) $1000 for a farm, including the farm house; a farm means a place used for raising crops, livestock, dairy products, poultry, etc., primarily for the market.
(This places a limit of $1000 of improvements on a farm, including any houses mentioned above).

(d) However, no limit is placed by this regulation (L-41) on *maintenance and repairs* to farm property and buildings, which means keeping a building or structure in sound working condition or fixing it when it has become unsafe or unfit because of wear and tear.

The above interpretations were discussed with local WPB officials and they agree that farmers have the right to obtain their supplies under the above regulations, in addition to regulations referred to under points 1, 2, 3 and 5 of the release.

Please let us hear from you with reference to the above.

Very truly yours,
AMERICAN SUGAR CANE LEAGUE,
Will J. Gibbons, Jr.
Chairman, Priorities Committee.

To: Mr. Wm. C. Iooss, Sugar Branch
Office of Distribution

From: A. D. MacIntyre, Program Implementation
Division Office of Materials and Facilities

Subject: CMP Regulation 5 as applied to sugar mills and sugar refineries also engaged in the production of sugarcane or sugar beets.

It is our understanding that some sugar companies are engaged in different phases of sugar production from the growing of sugarcane or sugar beets through the operation of the sugar mill and sugar refinery. We would like to point out that CMP Regulation 5 applies only to the industrial manufacturing, processing, packaging, preservation and storage of the sugar and does not include the growing of sugarcane or sugar beets, which is a farming operation. Farmers are specifically excluded from operating under CMP Regulation 5. Therefore, the preference rating assigned under this regulation may not be used by any sugar company to obtain maintenance, repair or operating supplies required in the production of the sugarcane or sugar beet crop. Nor would such expenditures be included in the total for the base year in computing the company's MRO quota. Such expenditures would not be chargeable against the company's quota for any current quarterly periods of its operation.

Requirements for maintenance, repair and operating supplies necessary to the production of the sugarcane or sugar beet crop would be obtainable in one of the following ways:

(1) Under the provisions of Priorities Regulation 19

(2) By means of a PD-1A application

(3) From a steel warehouse under the provision of CMP Regulation 4

(4) Order M-208 assigns different preference ratings to the deliveries of soft-wood lumber, depending on the use for which the lumber is purchased. Under List B, an AA-3 rating is assigned to lumber to be used for maintenance or *repair* of farm buildings *other than dwellings*. Under List C, and AA-4 rating is assigned to lumber to be used for the *maintenance* or *repair* of dwellings. The AA-4 rating is also assigned to lumber to be used for the *construction* of buildings and structures required for storage of agricultural products produced by farmers, planters, ranchmen, dairymen, or nut or fruit growers; also for the *construction* of shelters, barns, pens and sheds for livestock or poultry, and agricultural fences and gates. Such construction uses, however, are subject to the provisions of the Construction Order L-41. The mere fact that lumber for such construction is obtainable with a preference rating assigned by Order M-208 does not constitute an authorization to commence construction under Order L-41. An application on Form WPB-617 is necessary under Order L-41 before commencing construction on a farm if the total of such construction commenced during any year amounts to more than $1,000, of which sum only $200 may apply to any farm dwelling.
Under List C, a rating of AA-4 is also assigned to the purchase of lumber which is to be *physically incorporated* into:

(ii) Agricultural implements, and agricultural machinery, parts, accessories and equipment

(5) For other lumber or copper wire requirements, consult the AAA County Rationing Committee.

(6) Repair parts to farm machinery under Order L-257 do not require a preference rating.

(7) If a repair job is sent to a repair shop, the repair man may obtain the materials required for the job under CMP Regulation 9A.

Control Destructive Sugarcane Borer

The ravages of this destructive insect cause an annual loss to the sugar industry of approximately $5,000,000! Authorities recommended the use of cryolite as an effective and economical control measure—and Kryocide is NATURAL CRYOLITE.

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(8) Under CMP Regulation 9A, dealing with parts and materials for repairmen, it is provided that repair shops such as farm machinery repair shops, blacksmith shops, among others, may operate under this regulation. It also includes repair shops which are owned by the person for whom the repair work is done, if that person can segregate the purchases of a repair shop from his other purchases. The Office of the General Counsel, of the War Production Board states that one determining factor as to whether or not such a repair shop owned by the farmer and operating on the farm or ranch, may operate under this order, is whether it has at least one full-time employee, regularly employed in the shop. Under this regulation, such a repair shop, if qualified, could buy in any calendar quarter, up to 20 tons of carbon and alloy steel, a total brass mill and foundry products, and 200 pounds of aluminum in the forms listed in of 500 pounds of copper and copper base alloy, Schedule I.

(9) For construction to farm buildings in excess of the $1,000 limitation ($200 to any single dwelling house) in any year, under Order L-41, permission is required and application should be made on Form WPB-617.

The company may obtain its maintenance, repair and operating supplies required for the operation of its sugar mill and refinery under the provision of CMP Regulation No. 5.

To: Mr. Wm. C. Iooss, Sugar Branch
Office of Distribution

From: A. D. MacIntyre, Program Implementation
Division Office of Materials and Facilities

Subject: CMP Regulation No. 5

The memorandum submitted to you, dated April 24th, with reference to CMP Regulation No. 5 as applied to sugar mills and sugar refineries, listed different means whereby a producer of sugar cane or sugar beets (which are classed as farming operations) could obtain materials for maintenance, repair and operating supplies incidental to his farming operations. It was not intended to cover every possibility for obtaining material under War Production Board orders. It was primarily intended to point out a way by which some of the principal requirements could be procured without trying to cover all phases as to use and type of the materials The statements were made in general terms and, for more specific information in certain instances, it was recommended that the AAA County Rationing Committee be consulted.

Let me here state that through an error under paragraph (7) of the above-mentioned memorandum, the second word was repairs instead of *construction.* The general heading for the paragraph referred to maintenance, repair and operating supplies and this one sub-paragraph (7) should have referred to construction, inasmuch as Order L-41 has nothing to do with repairs, but is a construction order.

The following comments are made with respect to the letter dated May 10th, 1944, from the American

Sugar Cane League, Priorities Committee, of New Orleans, La., addressed to Mr. Clarence J. Bourg of the same organization in Washington, D. C., which letter you have referred to us. As stated in this letter, Order M-208 covering softwood lumber permits the use of different preference ratings to obtain lumber for different *uses*. Under that order, a preference rating of AA-3 is assigned for lumber for use for maintenance or repair of farm buildings other than dwellings, and a rating of AA-4 is assigned to the purchase of lumber for use for maintenance or repair of dwellings. These ratings are available to a farmer, including a cane grower or a sugar beet grower. Order M-208 also assigns a preference rating of AA-4 to obtain softwood lumber which is to be used for *construction* of "buildings and structures required for storage of agricultural products produced by farmers, ranchmen, planters, dairymen, or nut or fruit growers," and also for shelters, barns, pens and sheds for livestock or poultry and agricultural fences and gates. Note that the use of lumber in the last case is for construction and such construction would be subject to the limitation of Order L-41. The preference rating assigned under Order M-208, if used for the purchase of lumber, for such construction purposes, would not in any way permit its use for construction purposes in excess of the limits permitted by Order L-41 withouth authorization under that order. Under Order L-41 authorization must be obtained to commence construction in excess of $1,000 for a farm in any calendar year, of which amount not more than $200 may be spent on any farmhouse on the farm.

Order M-208 also assigns a preference rating of AA-4 to obtain softwood lumber which is to be physically incorporated into (ii) "agricultural implements, and agricultural machinery, parts, accessories and equipment," and also, as stated in the letter previously referred to, which will be incorporated into (vi) industrial machinery, parts, accessories and equipment, and engine and batteries. If a farmer is using the lumber for that specific purpose, he would be able to use the preference rating assigned under this order to obtain the lumber. It is, however, very doubtful if any farmer would physically incorporate lumber into any of the items listed in paragraph (vi) which pertains to industry rather than agriculture.

Reference is made to the comments in the letter, concerning CMP Regulation 9A, dealing with parts and materials for repairmen. Section A of this regulation states that it also includes repair shops which are owned by the persons for whom the repair work is done, if that person can segregate the purchases of his repair shop from his other purchases. Manifestly, every small tool shop or repair shop on a farm will not be classified as falling within the scope of the definition which would permit it to purchase up to 20 tons of carbon or alloy steel, 500 pounds of copper and copper base alloy, brass mill and foundry products, and 200 pounds of aluminum in the forms listed in Schedule I, during any calendar quarter. The Office of the General Counsel of the War Production Board states that one determining factor as to whether such a repair shop will be considered as coming under the provisions of CMP Regulation 9A or not, is whether the repair shop has at least one full-time employee, regularly employed in the shop. If so, the repair shop may operate under this order. Otherwise, it is not considered a repair shop within the meaning of this regulation.

Report of Stream Pollution Committee

On June 13 a meeting of the Stream Pollution Committee of the American Sugar Cane League was held at 9:30 A. M., in Baton Rouge. Those present were: Mr. J. J. Munson, Houma, Chairman; Mr. Albert J. Isacks, Houma; Mr. R. M. Murphy, New Orleans; Mr. A. J. Keller, Donaldsonville, Committee members, as well as Mr. Paul G. Borron, Jr., of Plaquemine, Legal Counsel for the League, and Mr. Marcel J. Voorhies.

After a preliminary meeting this Committee met with representatives of the Attorney General's office, Conservation Department, some State Representatives and representatives of the pulp and paper manufacturers.

The purpose of this conference was to discuss the terms of the proposed legislation which would remove the Department of Research and Statistics of the Department of Conservation from that Department and convert it into the Louisiana Water Control Authority.

The joint conference, after several hours of discussion, eliminated what appeared to be all of the objectionable features of the proposed legislation insofar as the Louisiana sugar industry is concerned.

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THE SUGAR BULLETIN

Entered as second-class matter April 13, 1925, at the post office at New Orleans, La., under Act of March 6, 1879.

We stand for the encouragement of Home Industries as against Foreign Competition

Vol. 22 NEW ORLEANS, LA., JULY 15, 1944 No. 20

Extracts from the Remarks of C. J. Bourg Before the Meeting of The Young Men's Business Club in New Orleans, July 5, 1944

The record of the Louisiana sugar industry during these war years is a proud example and justification of the wisdom of the policies the American Sugar Cane League has always advocated. Sugar production in Louisiana has increased each year since 1940. From an average of 329,000 tons for 10 years 1933-1943, Louisiana produced 400,000 in 1942 and 434,000 in 1943. This demonstrates that Louisiana is a dependable and reliable source of supply in war time. We point with natural pride to this accomplishment. The growing crop in Louisiana fields leads us to entertain the hope that we will maintain our progressive record of production this year. We have confidence that the American people will want to maintain prosperous and efficient, an industry that has contributed so materially to the war effort.. We have that confidence for two reasons: One is our faith in the gratitude of the American people; and the other is our reliance on the judgment of the American people to recognize the importance of keeping efficient and prosperous an industry which can be depended upon in time of war to protect and help provide the energy food requirements of our nation.

* * * * *

Those who plan regarding international relations and commerce between nations have a tendency to disregard the local and even the purely domestic considerations. Granting that it is not an easy matter to give the proper relative values, such difficulty hardly justifies disregarding the local problems or merits. The rainbow of international trade and goodwill is beautiful and attractive, but while we gaze in admiration we must not forget that we are moving forward in the every day tasks of life. It is just as wrong to overemphasize the prospects which may be realized through foreign commerce, as it would be wrong to underemphasize the value and importance of domestic industry.

Intelligent self-interest demands that we look at the whole picture.

The dollars and cents value of the Louisiana sugar industry is a definite contribution to the channels of commerce, all of which flow into New Orleans. On the average the sugar industry has represented a $40,000,000 crop value. In the past year it has exceeded $50,000,000. It is worth while to emphasize that this overall value is not the total benefit, for the reason that the money passes through the hands of farmers and laborers and factory operators and banks and local merchants, finally reaching the commercial headquarters in the city of New Orleans. The farmers received in 1943 for their sugarcane $32,000,000: the laborers are estimated to have received $20,000,000; the sale of sugar represented a total purchase price of $32,000,000; the molasses production reached an all time high value of $11,000,000. There should be no real necessity for directing your attention as to how all of these funds eventually find their way into New Orleans channels of trade. At the 7 to 1 ratio (estimated by economists to represent the trade exchange value) our $50,000,000 crop creates $350,000,000 in domestic commerce, all

THE
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Marcel J. Voorhies, Editor

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In which are consolidated

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.

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In This Issue

Extracts from the Remarks of C. J. Bourg Before the Meeting of the Young Men's Business Club in New Orleans, July 5, 1944 ..... Cover
Report of the Labor Committee 183
Flame Cultivation of Sugarcane 185
Notice of Meeting of Contact Committee 187

of which funnel eventually into New Orleans banks and business.

* * * * *

If we are to maintain our industries and keep our standard of living, we must of necessity require that the goods to be imported shall be produced under the same system of wage and hour standards as ours; under the same protection of Social Security as ours; and under a tax system like ours which will produce sufficient revenue to give to the natives of the exporting country the same advantages as to education, recreation and health as are supplied by and to the people of the United States. With this ideal firmly insisted upon, we make it possible for American producers to compete with foreign producers, so that *both* may deal in the United States markets. We make it possible, also, for the natives of the exploited countries to be lifted upward to a standard that will benefit mankind generally.

* * * * *

Sugar is recognized as a food of the highest energy value and it has the lowest cost of production among foodstuffs. Let us take the example of the Philippine Islands from which we have been importing about 1,000,000 tons annually. There are no less than a half billion people in Eastern Asia who are greatly in need of energy producing foods and practically none of them have sugar in their diet. The per capita consumption of sugar in China is less than two pounds, which means that most of the Chinese eat no sugar at all. One pound of sugar consumed by each of the 400,000,000 Chinese would require 200,000 tons. Just stimulating and encouraging the Chinese to eat five pounds of sugar would make it possible to find a market for all of the sugar that the Philippines will be able to export for a long time to come. Didn't Standard Oil teach Chinese to use kerosene by giving them lamps? That is only one example. It can be expanded to a point where with a proper distribution of sugar there would no longer be any bureaucrat urging that the production of sugar in the United States be limited or reduced.

This may sound like a revolutionary program but it is one that has definite practical possibilities. It could certainly be used as a realistic obbjective for the guidance of international trade so that greater quantities of foods would be consumed in the countries where they are produced, and in turn it would permit the maintenance and development of agricultural industries in the United States to supply a generous share of the consumption requirements of our own people.

More Sugar For Apricots

Packers of whole unpeeled apricots will be given extra sugar this year for use in canning, the Office of Price Administration announced recently.

Because of shortages of labor in packing plants, OPA said, many more whole unpeeled apricots will be canned than in normal years. Packing the fruit unpeeled requires the use of more sugar, but it eliminates the work of peeling and halving, and permits the packer to make the best possible use of the labor available.

The additional sugar to be authorized is 1.3 pounds per case for "fancy" grade, one pound per case for "choice" grade and six-tenths of a pound per case for "standard" grade for each case of whole unpeeled

apricots packed this year in excess of the pack of the same grade in the 1941 canning season.

This extra sugar is granted in addition to the usual provisional allowance of sugar the packer receives.

Report of the Labor Committee

On Thursday, June 8th, the Labor Committee of the American Sugar Cae League of the U. S. A., Inc., was requested to be represented at a special meeting of the State Farm Council in Dean Lee's office at the University in Baton Rouge.

At that meeting the Agricultural Extension Force reported on their activities with respect to prisoners of war for agriculture. It has developed that the prisoners of war supply will be rather limited because all of the camps in the United States are being policed to a large extent by prisoners of war and we understand that practically all of the Italian prisoners are being used for the same purpose in the Pacific Island camps. The prisoners of war in the United States have been reallocated to the various Service Commands and we find that the Eighth Service Command, which serves Louisiana, has a quota roughly of 22,000 prisoners based on the present supply in the United States.

The Service Command in turn had to make an allocation to the various States which it serves and on that score Louisiana, Texas and Arkansas have each been allocated approximately 4,500 and New Mexico and Oklahoma 2,700. A certain number must be kept by the Eighth Service Command for local allocation.

It has also developed that the responsibility for the allocation of the State quota within the State is strictly the responsibility of the Agricultural Extension Division. With that set-up, the Extension Division submitted to the meeting a tabulation of the minimum requirements of the various camps in Louisiana on a month to month basis and also their tentative allocation to the various camps on a month to month basis. This they feel is as equitable an allocation as can be made, giving proper consideration to the major crops of the State.

The Extension Division also requested that a special committee of the State Farm Council be appointed to advise and assist the Agricultural Extension Division in the further allocation of prisoners, and especially in the allocation of any number which may be available because of some of the camps not being able to arrange for their accommodations. On that Committee, Mr. L. A. Borne, of Raceland, serves as Chairman, with Mr. John Dole, of Plain Dealing, Louisiana, representing cotton, and Mr. Tom Pluncket, of Jefferson Davis Parish, representing rice.

Below follows the details of the basis of the tentative allocation of war prisoners:

**Louisiana Agricultural Labor Force*

	April 1, 1941	April 1, 1943	Decrease
Total	460,921	324,300	30%
Family	250,375	208,047	20%
Hired	202,546	116,253	43%

During the same period, agricultural production was substantially increased. These facts indicate that farmers in Louisiana lost one and one-third workers per farm from April 1, 1941 to April 1, 1943. The farm labor supply in 1944 is expected to be approximately 15% less than in 1943.

1944 Situation

Assumptions:

1. That the total labor force needed to produce and harvest 1944 crops and livestock will approximate the labor force used to produce and harvest the 1941 production; 1941 crop yields were low due to weather conditions and this estimate is therefore conservative.
2. That the total labor force and the breakdown by family and hired labor in the different seasons as reported by the state office of the B. A. E. Crop and Livestock estimates is relatively accurate.
3. That the reported number of family and hired laborers in 1943 from the same source is relatively accurate, and that the trend in number in 1941 to 1943 (a decline) will move at about the same rate for 1944 (this assumption is also very conservative because farm workers are decreasing at an increasingly rapid rate.)

	February	April	August	November
NUMBER NEEDED 1944:				
Family Labor	238,738	258,375	251,140	242,873
Hired Labor	116,718	202,566	104,383	119,886
NUMBER AVAILABLE 1944:				
Family Labor	192,616	177,841	171,860	187,047
Hired Labor	98,799	98,799	51,635	58,177
SHORTAGE IN 1944:				
Family Labor	46,122	89,534	79,280	75,826
Hired Labor	17,919	103,787	52,748	61,769
Total Shortage	64,041	184,324	132,028	147,595

* Unpublished data—Louisiana Agricultural Experiment Station.

Farm Labor 1944

The farm labor supply in Louisiana in 1944 is expected to be approximately fifteen per cent less than in 1943. Assuming that the total labor force needed to produce and harvest the 1944 crops and livestock in Louisiana will approximate the labor force used in 1943, farmers will need to plan wisely and work together even more than was done in 1943. Farmers will be assisted in the recruiting, training, and placing of agricultural labor. Continued emphasis will need to be placed on the following:

1. Full and efficient employment of labor now on farms.
2. Efficient utilization of machinery now on farms.
3. Securing of additional needed farm machinery.
4. Complete mobilization of all workers within a parish and the state.
5. Adjustment of school schedules to permit boys and girls to engage in work of a nature suitable to their ability.
6. Assistance from women in work for which they are suited.
7. Labor Utilization:
    1. Doing work on time
    2. Organizing work on individual farms
    3. Simplification of jobs
    4. Exchange of labor
    5. Exchange of machinery
    6. Shifting labor between communities, parishes and states.

Priority of Sources of Farm Labor

1. Farm labor now on farms
2. Farm labor now in towns
3. Exchange of local labor—Full use of machinery
4. Seasonal town labor
5. II-C Selective Service Classification
6. Farm labor now in industry
7. Farm boys in school
8. Other boys in school
9. Farm Women
10. Seasonal farm labor from other parishes

Minimum Requirements—Prisoners of War as Agricultural Workers Louisiana 1944

	No. of P. W.s	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1. Tallulah	500	250	250	250	250	350	500	500	500	500	500	500	500
2. Monroe	350	200	200	200	200	350	350	350	350	350	350	350	350
3. Jennings	270								270	270	270	150	
4. Sulphur	150								150	150	150	150	
5. Franklin	500	250	250	250	250	250	250	250	250	250	350	500	500
6. Iberia	500	150	150	150	150	150	150	150	150	150	350	500	500
7. Donaldsonville	500	150	150	150	150	250	250	250	250	250	500	500	500
8. Port Allen	350	250	250	250	250	250	250	250	250	250	350	350	350
9. Hahnville	150					150	150	150	150	150	150	150	150
10. Lockport	150					150	150	150	150	150	150	150	150
11. Mathews	425					150	150	150	150	150	300	300	300
12. Woodlawn	500	150	150	150	150	250	250	250	250	250	350	350	350
13. Youngsville	350	150	150	150	150	150	150	150	150	150	350	350	350
14. Rayne	400								400	400	400	400	
15. Ringgold	215	115	115	115	115	115	115	115	115	115	115	115	115
16. Benton	185					185	185	185	185	185	185	185	185
17. Shreveport	270	150	150	150	150	270	270	270	270	270	270	270	270
18. Columbia	255	150	150	150	150	255	225	255	255	255	255	255	255
19. Maifest	200	100	100	100	100	200	200	200	200	200	200	200	200
20. Ferriday	250	150	150	150	150	250	250	250	250	250	250	250	250
21. Winnsboro	400	200	200	200	200	400	400	400	400	400	400	400	200
22. Thibodaux	410									300	410	410	410
23. Bastrop	400	150	150	150	150	200	200	200	200	400	400	400	400
24. Natchitoches	500	150	150	150	150	500	500	500	500	500	500	500	300
25. Coushatta	215	150	150	150	150	215	215	215	215	215	215	215	150
26. Rayville	360	150	150	150	150	360	360	360	360	360	360	360	150
27. Reserve	400	150	150	150	150	150	290	290	290	290	400	400	400
28. Houma	305	300									300	300	300
29. Montegut	220	215									215	215	215
30. Kaplan	445								325	470	455	295	
31. Gueydon	445								195	345	360	255	
32. Eunice	360								585	585	585	585	
33. Edgerly	370								250	250	250	250	
34. Bell City	255								250	250	250	250	
35. Welsh	250								250	250	250	250	
36. Iowa	500								250	250	250	250	
37. St. Martinville	400							400	400	400	400	400	400
38. Franklinton	225											225	255
Livingston Base Camp	350	150	150	150	150	300	300	300	350	350	350	350	150
Ruston Base Camp	300	100	100	100	100	300	300	300	300	300	300	300	100
Polk Base Camp	200	100	100	100	100	160	160	160	200	200	200	200	100
TOTAL	13,760	4,030	3,730	3,730	3,730	6,310	6,600	7,000	10,015	10,800	12,645	12,785	8,775

June 9, 1944—Recommendations for Utilization of Prisoners of War as Agricultural Workers—Louisiana

	No. of P.W.'s Now in Camp	June	July	August	September	October	November	December
1. Tallulah	400	500	500	200	200	200		
2. Monroe	250	350	350	150	150	150		
3. Ringgold			100	100	100			
4. Benton			150	150	150	150		
5. Shreveport			150	150	150	150		
6. Manifest			75	75	75	75		
7. Ferriday			150	150	150	150		
8. Winnsboro			200	200	200	200		
9. Bastrop			200	200	200	200		
10. Natchitoches			150	150	150	150		
11. Coushatta			150	150	150	150		
12. Rayville			150	150	150	150		
13. Thibodaux							400	400
14. Reserve							350	350
15. Houma							300	300
16. Montegut							200	200
17. Franklin	250	250	250	150			500	500
18. Jeanerette	227	282	282	150			500	500
19. Donaldsonville	250	350	350		155	155	500	500
20. Port Allen	245	293	293	175		100	350	350
21. Hahnville	125	125	125				150	150
22. Lockport	125	125	125	150			150	150
23. Mathews	160	160	160	150			150	150
24. Woodlawn	250	250	250	200			250	250
25. Youngsville	115	150	150				350	350
26. Jennings				150	270	270		
27. Sulphur				150	150	150		
28. Rayne				150	200	200		
29. Eunice				150	300	300		
30. Welsh				150	250	250		
31. Iowa				150	250	250		
32. Kaplan				150	200	200		
33. Gueydon				150	200	200		
34. Edgerly				150	250	250		
35. Bell City				150	250	250		
36. Franklinton							150	150
Ruston Base Camp	100	100	100	100	100	100	100	100
Livingston Base Camp	100	100	100	100	100	100	100	100
TOTAL	2,597	3,035	4,510	4,500	4,500	4,500	4,500	4,500

11. Farm Labor from other states
12. Prisoners of war and foreign workers
13. Soldiers on 3 day passes and furloughs
14. Soldiers used in groups in critical areas

The Labor Committee of the American Sugar Cane League held a meeting on June 20th in the County Agricultural Building, Thibodaux, which was also attended by a large group of sugarcane producers from all parts of the sugarcane area. The assembled group considered the request for war prisoners and also the tentative allocation of those prisoners made by the Agricultural Extension Division of Louisiana, and unanimously passed the following resolution with respect thereto:

Whereas, it has come to the attention of the Louisiana sugar industry that the allocation of war prisoners by the Agricultural Extension Division contemplates removing all the prisoners of war from the Louisiana sugarcane area during September and October, and

Whereas, the preparation of the land and proper ditching for the planning of the succeeding crop and the actual planting of that crop are all performed during this period of September and

October; also the grinding operation, which involves the harvesting of cane, is started in the greater part of the sugar belt between the first and tenth of October, and

Whereas, the labor shortage in the cane area is more acute now than it has ever been before and threatens seriously the harvesting of the 1944 crop and the production of the 1945 crop of sugar

Therefore be it Resolved, that we urgently protest against the removal of any of the war prisoners presently in the sugar belt, away from the sugar belt during September and October, and, further, that every effort be made to increase the number of war prisoners during the months of September, October, November and December.

Flame Cultivation of Sugarcane

By Harold T. Barr
Louisiana Agricultural Experiment Station
Baton Rouge, Louisiana

Flame cultivator tests in Louisiana sugarcane fields were started out with reservations in the spring of 1942 on Glenwood Plantation in a cooperative project between Bronier Thibaut and the Agricultural Engineering Department of Louisiana State University. Shortly after this work was started, Valdemar Knudsen, representing Arthur Richards, who controls certain patents, moved a cotton flame cultivator to Houma. Mr. Knudsen found this machine unsuited and rebuilt it to sugarcane requirements and carried on some cooperative work with Mr. Elliott Jones. Some ten or twelve machines were used during the 1943 crop season and some seventy are in use during the 1944 season. The machines in use during the 1943 season were nearly all of plantation manufacture. The 1943 machines varied from a simple one-mule one-row machine to a three-row machine equipped with engine, compressor, fuel pump, air lifts, burners, and other attachments. Five machines were built by the Thomson Machinery Company for Arthur Richards and associates in 1943. Three of these latter machines were used in the sugar belt in working out improvements. Of the seventy odd machines in use during the 1944 season, forty-three were made by the Thomson Machinery Company.

During the 1942 season eighteen test blocks with check areas were staked out on Glenwood and Woodlawn Plantations. These tests were carefully checked for cane injury, cane growth, suckering, number of stalks per 10 feet of row, and final yield. The results of these tests are best shown by an examination of the tables below. These results are one year's results and conducted without any previous data or experience as to the amount of heat that sugarcane can stand without injury.

In a few cases the sugarcane was given a very severe burning and took on a golden brown color the second day after burning (Test 15), but this all disappeared within five days and at harvest time outyielded the hoe plots 1.3 tons per acre. Height measurements indicated some temporary stunting by the flame but this soon disappeared and the flamed grew at an everage equal to the unflamed. Test 18 was not included in the summary because of the large difference in yield in favor of the flamed plot. This test consisted of two blocks of cane very heavily infested with water grasses. It was at first thought advisable to plow the cane up. One block was flamed only. The other hand hoed. The flamed plot was kept clean after the first flaming. The hand hoed or check plot stayed full of water grass because with the rains that followed hoeing made it impossible to destroy the vegetative growth of the water grass. The low yield in the check plot was due to the large amount of water grass in it that could not be controlled by hoeing, which definitely illustrates the practibility of the flame cultivator in such extreme cases.

Each two-row flame cultivator is taking care of from 90 to 225 acres of cane, depending upon the amount and kind of weeds and grasses. Most operators report covering from 14 to 17 acres per machine in a nine hour day. In 1943 one company had a yield of 26 tons of sugarcane where no Johnson grass was found and 17 tons where Johnson grass had infested their fields. This company spent $17.50 per acre trying to control Johnson grass in 1942. This year they are flaming once per week for eight weeks. At the end of six weeks there was very little grass in the fields. This frequent flaming may retard the cane growth to such an extent that yields would have been better with no control. There was no apparent difference in height of the sugarcane after five flamings, but yield records must be obtained for final proof. With a normal acreage of 640 acres in sugarcane, in the past, sixty-five hoe hands were used. Today they have fourteen old men, women, and boys, and supplement them with two two-row flame cultivators. Hoe hands cover approximately ¼ acre per day and get $1.50 per day; thus an acreage cost of approximately $6.00 per acre to hoe once with heavy infestation. Cost of flaming on various plantations varies from 60 to 80 cents per

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Figure I.

TEST	VARIETY	STALKS PER 10 FT. OF ROW		YIELD PER ACRE		BRIX		SUCROSE		PURITY	
		Flamed	Check	Flamed	Check	Flamed	Check	Flamed	Check	Flamed	Check
1.	29-103	73	68	25.7	25.3	17.45	17.74	13.56	13.66	77.71	76.52
2.	29-120	85	86	24.8	31.2	16.66	17.71	13.52	14.37	81.18	81.16
3.	29-120	91	89	27.0	30.1	17.03	16.49	13.68	13.69	80.34	80.81
4.	29-120	84	84	25.5	26.7	16.71	18.10	13.51	15.57	80.82	86.01
5.	29-120	83	82	26.4	29.7	16.65	17.37	13.21	14.50	79.32	83.49
6.	29-120	85	80	27.1	28.1	16.85	17.16	14.00	14.03	83.11	81.77
7.	29-120	78	83	24.7	27.5	16.00	16.97	12.45	13.85	77.82	81.06
AVERAGE		82.71	81.71	25.8	28.3	16.76	17.36	13.41	14.23	80.04	81.62

This set of experiments was started without having any prior knowledge as to what should be the proper distance to set burners ,rate of travel, height of burners, etc. Consequently, the first and second applications of heat were different from what was later established as the proper distance to set burners and rate of travel. Second factor entering into results in this set of experiments was that flame plots should have received one more flaming. Observations after lay-by showed checks to be far cleaner than flamed rows.

Figure II.

TEST	VARIETY	STALKS PER 10 FT. OF ROW		YIELD PER ACRE		BRIX		SUCROSE		PURITY	
		Flamed	Check	Flamed	Check	Flamed	Check	Flamed	Check	Flamed	Check
8.	29-103	63	63	27.0	29.1	17.46	16.97	13.70	13.34	78.44	78.60
9.	29-103	68	70	27.2	27.7	17.37	17.56	13.37	13.79	76.96	78.54
10.	29-103	72	69	25.9	27.0	17.49	17.30	13.89	13.56	79.44	78.37
11.	29-103	66	64	24.3	25.9	17.46	17.30	13.58	13.52	77.79	78.15
12.	29-130	No readings		26.6	25.8	17.35	17.39	13.39	13.70	77.01	78.32
13.	29-120	104	116	20.7	14.3	17.77	17.58	14.48	14.81	83.49	84.17
14.	281	63	69	22.6	20.2	16.13	16.58	13.16	13.05	81.56	78.74
15.	29-120	103	86	19.1	17.8	17.99	17.86	14.85	14.72	82.52	82.34
16.	28-11	82	77	13.1	12.5	17.12	17.46	13.16	13.51	76.74	77.40
17.	29-116			22.1	18.3	16.12	16.36	12.52	12.78	77.76	78.71
AVERAGE				22.8	21.8	17.22	17.23	13.64	13.67	79.17	79.33
18.	29-103	No readings		24.8	12.6	17.75	17.56	14.25	13.81	80.28	78.65

Burners in this set of experiments were set 19 inches apart and rate of travel in most cases was 2 miles per hour, except where alligator grass condition was bad, or heavy growth of grass did not permit good penetration, then rate was reduced to 1½ miles per hour. In our opinion, skipping or one burning between May 19 and June 13 would have given better results.

acre for each flaming. This cost includes two men, tractor operation and depreciation, and burner fuel, but did not count burner depreciation.

That the flame cultivator is an established practice is best supported by the fact that the owners of present machines have placed orders for the delivery of one hundred additional machines for the 1945 season.

Some growers faced with a labor shortage bought or made machines as a cure-all and have attempted to control grasses in the growing crop that had already outgrown the crop. Most plantations reported findings from conclusions drawn from a single season; however, different weather conditions may cause a variation in results. Three or four flamings are normally required but density of grasses, and weather may alter the number of flamings required. Do not begin flaming too early—it may reduce the yield. Do not try too intensive an application of heat—frequent scorchings are a more effective method of control. Be sure the burners are set the proper distance from the cane, use the correct speed, and direct flaming at the base of the plant. This will result in less injury. The general opinion is that the operators are entirely satisfied that the flame cultivator is proving indispensable during the exist-

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ing period of acute labor shortage, and most operators believe that under normal conditions, with adequate labor available, the flame cultivator will prove more efficient and economical than hand hoeing.

NOTE: The author wishes to acknowledge the valuable assistance of Messrs. Broner Thibault, B. C. Thomson, J. C. Burden, John A. Wilbert, and Moore Valois.

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NOTICE OF MEETING

The Contact Committee of the American Sugar Cane League will meet with the scientists of the U. S. D. A. Station, and the L. S. U. Experiment Station scientists at the U. S. Field Station, Houma, Louisiana, 9:30 A. M., Thursday, July 20.

Sugarcane varieties will be the main topic of discussion. All sugarcane growers are cordially invited to attend.

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Investigations Of Sugarcane Borer Control By The Use Of Resistant Varieties

By Ralph Mathes and J. W. Ingram,
U. S. Department of Agriculture, Agricultural Research Administration, Bureau of Entomology and Plant Quarantine

The use of resistant varieties of crop plants to combat insect pests is a relatively new field of study, but one in which there have been encouraging developments. A recent survey of the literature on the subject shows that records of resistance involving nearly 100 plant and over 100 insect species have been reported.[1]

The successful use of resistant varieties would have many advantages over most other methods of insect control in that it would cost the grower nothing additional in the way of money, labor, or cultural practices. It would also be one of the most stable forms of pest control, as it would reduce to a minimum the fluctuation of insect injury from one year to the next.

Investigations of the resistance of varieties of sugarcane to the sugarcane borer are being conducted cooperatively by the Bureau of Entomology and Plant Quarantine and the Bureau of Plant Industry, Soils, and Agricultural Engineering, of the U. S. Department of Agriculture. The general objectives of the investigations are (1) to determine the relative resistance of the more common commercial varieties of sugarcane to the sugarcane borer, (2) to determine the desirability of new varieties from the standpoint of borer resistance, and the amount of borer damage to be expected in them, and (3) to select and breed new sugarcane varieties resistant to the borer.

[1] Snelling, R. O. The place and methods of breeding for insect resistance in cultivated plants. Jour. Econ. Ent. 34: 335-340. 1941.

Resistance of Common Varieties of Sugarcane to the Borer

Information on the relative infestation of commercial varieties is necessary to avoid the planting of susceptible varieties in areas that normally have high borer populations and to know on which varieties it would be most advantageous to concentrate control measures. As the susceptibility of old varieties may change over a period of several years or even on succeeding years, and as new varieties are released from time to time for commercial culture, these studies are carried on each year.

Infestation counts were made in replicated test fields of both plant and stubble cane grown by the Bureau of Plant Industry, Soils, and Agricultural Engineering at Greenwood, Oaklawn, and Raceland Plantations in southern Louisiana during each year of the period 1936-41 and, at the last two plantations only, in the years 1942 and 1943. Records were made of the percentages of joints showing borer injury externally on approximately 100 stalks of each variety in each field at harvesttime. Usually 20 stalks were examined in each of five replicated plots. A comparison of joints bored, as given in table 1, shows that varieties C. P. 29/103 and C. P. 29/116 had 32 and 18 percent more infestation, respectively than variety Co. 281. There was little difference among varieties C. P. 29/320, C. P. 28/11, and C. P. 28/19, as all had, in descending order, from 94 to 83 percent

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In This Issue

Investigations of Sugarcane Borer Control by the use of Resistant Varieties.....Cover
Field Reports 192
Sugar Beet Farming Practices for 1944..... 192
Western Division Meets..... 194
Legislative Committee Meeting..... 195
New Cane Varieties..... 195

of the infestation of Co. 281. Variety Co. 290 had the least infestation, with 76 percent as much as Co. 281.

In the locality around Franklin, La., some growers report greater damage for variety Co. 290 than for most of the other varieties grown. The infestation records show its performance there to be much more variable than in other sections of Louisiana. In some years it has had a comparatively high infestation in tests in the Franklin area, but its average infestation over a period of years is the lowest of any of the commercial varieties grown even in that area.

The comparatively low average infestation of variety Co. 290 is further shown by the results of examinations conducted jointly on 10 plantations in both 1936 and 1937 by the Louisiana Agricultural Experiment Station and the Houma laboratory of the U. S. Bureau of Entomology and Plant Quarantine [2], [3].

TABLE 1
Percentages of joints bored in 7 commercial varieties of sugarcane grown in replicated plots on Oaklawn, Greenwood, and Raceland Plantations, La., during 1936-43.

Year	Variety						
	C. P. 28/11	C. P. 29/116	C. P. 29/320	C. P. 28/19	Co. 281	Co. 290	C. P. 29/103
Plant Cane							
1936	29.77	32.98	23.71	25.44	23.53	15.40	32.40
1937	28.78	35.84	34.77	32.44	33.82	23.23	-------
1938	30.35	43.99	40.56	31.33	40.87	26.79	-------
1939	31.14	40.85	32.42	25.71	33.40	26.78	-------
1940	-------	-------	13.49	15.13	13.47	7.74	22.34
1941	-------	38.41	28.23	26.67	33.79	26.11	36.71
1942	-------	45.60	29.00	29.10	34.90	30.80	39.60
1943	-------	41.00	37.20	35.10	36.00	34.20	-------
Actual Average	-------	-------	29.92	27.62	31.22	23.88	-------
Relative Average[1]	91	118	96	88	100	76	124
First-stubble cane							
1936	13.03	16.36	14.68	14.11	15.51	9.80	19.66
1937	21.02	29.18	19.74	18.90	24.73	14.91	36.60
1938	26.60	40.58	30.89	24.18	32.21	20.94	-------
1939	25.43	37.46	28.89	22.50	29.87	26.36	-------
1940	15.46	15.16	9.03	9.01	10.94	6.01	-------
1941	-------	-------	22.60	18.66	23.91	22.25	34.24
1942	-------	37.50	32.10	23.40	34.20	27.60	50.70
1943	-------	32.90	26.90	22.00	31.00	28.00	38.20
Actual Average	-------	-------	23.10	19.10	25.30	19.48	-------
Relative Average[1]	90	117	91	75	100	77	139
Average of plant and first-stubble cane							
Actual average	-------	-------	26.51	23.36	28.26	21.68	-------
Relative Average[1]	90	118	94	83	100	76	132

[1] Relative average (Co. 281 equals 100) is obtained by dividing the percentage of joints bored for a particular variety by the percentage of joints bored for variety Co. 281 growing in the same replicated tests for the same year or years.

Co. 290 had the least infestation of any of the 7 commercial varieties examined in both plant and first-year stubble cane at each of the 10 plantations in both years.

Additional comparisons of infestations in Co. 290 and C. P. 29/116 obtained from annual examinations of 8 to 10 State and Federal varietal test fields showed the average percentages of joints bored as given in table 2.

TABLE 2
Average infestation in varieties Co. 290 and C. P. 29/116 in various State and Federal varietal test fields.

Variety	Average percent joints bored		
	1936 Plant Cane	1937 Plant Cane	1937 Stubble Cane
Co. 290	12.2	15.8	14.1
C. P. 29/116	25.7	28.2	25.3

To campare varieties Co. 290 and C. P. 29/116 when planted in large fields under normal plantation conditions, random samples were taken on each of the 2 varieties in each of 6 locations near Houma, La., and in each of 8 locations near Franklin, La., in 1942.

[2] Ellisor, L. O., and Jaynes, H. A. Varieties of sugarcane in relation to sugar cane Borer damage 1936. La. Agr. Expt. Sta. Bul. 298: 20-23. 1938.
[3] Ingram, J. W., and Ellisor, L. O. Varietal susceptibility of cane to sugarcane borer injury in 1937. La. Agr. Expt. Sta. Bul. 323: 34-36. 1940.

At each location samples were taken in one cut of Co. 290 and in one cut of C. P. 29/116, growing nearby on the same type of land. Ten random samples of 10 stalks each were examined for percentages of joints bored in each of the 2 varieties at each location. Results of these observations showed C. P. 29/116 to have the heaviest infestation at 12 of the 14 locations. Data covering the 8-year period from 1936 to 1943 at Oaklawn, Greenwood, and Raceland Plantations show the relative positions of the commercial varieties with respect to infestation to be about the same whether taken either in small replicated plots or in large plantation fields.

The low infestation of Co. 290 is further substantiated by data from the annual damage survey conducted cooperatively by the Louisiana Agricultural Experiment Station and the Bureau of Entomology and Plant Quarantine during the years 1937, 1938, 1940, 1941, and 1942. This survey was usually made on 3 varieties growing in large fields on each of 10 plantations well distributed over the sugarcane-growing area. When these varieties were growing on the same type of soil and could be compared, the average infestation in Co. 290 for this period of years was less than that in either Co. 281 or C. P. 29/116 on all plantations except Alma, where the infestation was of little economic importance.

Although the infestation of Co. 290 is usually less than that of any of the other commercial varieties, its tolerance of infestation appears to have decreased in recent years. This decrease in tolerance may be partly due to its apparent decrease in vigor. Arceneaux, Hebert, and Krumbhaar[4] state. "There is, however, some evidence indicating that observed recessions in yield (of Co. 290 and C. P. 29/320) may, in part at least, represent a definite reduction yield capacity, possibly associated with a progressively severe encroachment of certain diseases on these particular varieties." Forbes states,[5] "Co. 290 has in recent years shown an increasing susceptibility to red rot and the disease often becomes severe in this variety when the cane is subjected to adverse conditions."

Tests conducted in 1943 indicated that for a given percentage of joints bored, Co. 290 suffered a relatively high loss of sugar per acre, although for several preceding years the reduction in sucrose caused by borer injury to this variety was small as compared with that occurring in other varieties.

Comparative Borer Infestation of Promising Varieties of Sugarcane

Information on the comparative infestation of the most promising new canes is of value in determining the desirability of releasing these varieties for commercial production, and in advising growers on the amount of borer damage to be expected in them. Table 3 gives for each of the varieties listed the years tested, number of samples examined, number of stalks examined, and its susceptibility to the borer as compared with Co. 281. Two varieties, C. P. 33/409 and C. P. 34/79, have been decidedly resistant to the borer. The first had only 49 percent as much infestation as variety Co. 281 and the second only 55 percent as much. If either of these varieties should be released for commercial culture, they should prove to be of much value in decreasing borer injury. Not only should they have only about half the infestation of the average present-day commercial varieties, but, because of their effect on the borer population, the overflow to adjoining fields of more susceptible varieties should be less.

[4] Arceneaux, G., Hebert, L. P., and Krumbhaar, C. C. Results of sugarcane variety tests in Louisiana during 1942. Sugar Bul. 21: 147-151. 1943.

[5] Forbes, I. L. Red rot and deterioration of Co. 290 seed cane. Sugar Bul. 20: 86-87. 1942.

TABLE 3

Comparative susceptibility to the sugarcane borer of commercial varieties and of the most promising unreleased varieties of sugarcane as determined from percentages of joints bored in Louisiana.

Variety	Years Tested	Total No. of Samples Examined	Total No. of Stalks Examined	Susceptibility* Rating (Co. 281=100)
Commercial Varieties				
Co. 281	1936-43	312	5,571	100
Co. 290	1936-43	296	5,366	74
C. P. 28/11	1936-40	203	3,825	90
C. P. 28/19	1936-43	299	5,421	83
C. P. 29/103	1936-37,40-43	182	3,281	134
C. P. 29/116	1936-43	258	4,534	119
C. P. 29/120	1936-38,40-43	175	3,317	82
C. P. 29/320	1936-43	299	5,380	94
C. P. 34/120	1940-43	48	713	83
C. P. 33/243	1939-43	68	1,162	115
C. P. 33/310	1942-43	12	157	99
Promising varieties and varieties which at one time showed promise				
C. P. 29/99	1938-39	23	305	128
C. P. 29/137	1938-41	65	1,144	116
C. P. 31/509	1938-43	107	1,785	83
C. P. 31/529	1940-43	32	495	90
C. P. 31/551	1942-43	12	151	91
C. P. 32/202	1938-40	56	935	76
C. P. 32/206	1939-43	76	1,255	82
C. P. 32/134	1939-40	18	330	93
C. P. 32/324	1939-41	27	540	128
C. P. 33/224	1939-42	33	581	136
C. P. 33/233	1940-41	11	210	189
C. P. 33/253	1939-41	36	691	73
C. P. 33/372	1940-43	50	836	66
C. P. 33/409	1939-43	54	869	49
C. P. 33/485	1940-43	17	233	84
C. P. 34/1	1940-43	38	613	102
C. P. 34/21	1939-43	42	633	77
C. P. 34/53	1940-43	26	361	93
C. P. 34/54	1940-43	21	298	51
C. P. 34/75	1940-43	25	343	85
C. P. 34/77	1940-42	18	304	72
C. P. 34/79	1940-42	36	665	55
C. P. 34/80	1941-43	30	424	110
C. P. 34/86	1940-43	25	342	131
C. P. 34/92	1940-43	24	332	69
C. P. 34/115	1940-43	24	324	121
C. P. 34/139	1941-43	28	374	108
C. P. 34/141	1941-43	15	203	83
C. P. 36/56	1941	2	29	59
C. P. 36/62	1941-43	11	175	93
C. P. 36/70	1939, 41-43	10	126	71
C. P. 36/75	1939, 41-43	13	200	103
C. P. 36/80	1943	4	58	87
C. P. 36/85	1939-43	15	189	57
C. P. 36/94	1939, 41-43	13	168	87
C. P. 36/105	1941, 43	10	137	70
C. P. 36/111	1943	4	61	140
C. P. 36/161	1943	4	60	81
C. P. 36/183	1943	4	61	144
C. P. 36/185	1943	4	61	90
C. P. 36/191	1941-43	18	212	121
C. P. 37/9	1943	4	61	122
C. P. 38/18	1943	4	60	97

* Susceptibility rating (Co. 281 equals 100) was obtained by dividing the percentage of joints bored for a particular variety by the percentage of joints bored for variety Co. 281 growing in the same replicated tests.

Selection and Breeding of New Varieties Resistant to the Sugarcane Borer

Approximately 16,000 seedling varieties of sugarcane grown in nurseries of the Bureau of Plant Industry, Soils, and Agricultural Engineering have been examined during the last 6 years in an effort to find new varieties resistant to the borer. Incidentally, infestation counts are made on all selections from the seedling nurseries, and, by having a measurement of this variable, workers in the Bureau of Plant Industry, Soils, and Agricultural Engineering are able to appraise more accurately the agronomic qualities of the seedlings they select. About 150 seedling varieties have been selected for testing in the laboratory and in the field because of their low infestation and fair agronomic qualities.

Tests are also made in the laboratory to determine the reactions of the borer on the respective varieties. These consist merely in rearing borers on them and measuring the relative rate of borer survival, and the weight, development, and reproductive capacity of the insects. The laboratory tests on all varieties are conducted alike, and the same amount of cane is used to feed the borers for each variety. It might be well to note here that the borers reared on some

varieties outstrip those reared on other varieties by about one-third, not only in numbers but also in size and reproductive capacity.

To determine the effect of the borers on the different varieties field tests are made by planting them in replicated plots and artificially infesting each stalk with 25 ready-to-hatch borer eggs. Artificial infestations are made to insure uniformity of infestation. It has been thought that the differences in varietal infestations occurring when many varieties are planted close together in small plots may be due to selection by the ovipositing moths rather than actual resistance in the more lightly infested varieties, and that the results might be different under field conditions where, in the absence of varieties attractive to the moths, eggs would be laid on the comparatively unattractive varieties. Artificial infestation eliminates this possibility of error. The most promising varieties from the preceding testss are placed in outfield tests on Cypremort Plantation where the infestation is usually rather heavy.

Up to the present time nine varieties have maintained their resistant status throughout these tests to such an extent that they have been recommended to the Bureau of Plant Industry, Soils, and Agricultural Engineering for use in breeding borer-resistant varieties. Based on commercial variety Co. 281 as equaling 100, the percentage infestation of these varieties is from 29 for the lowest to 66 percent for the highest. Six are sufficiently good to have been assigned C. P. numbers. Both stalk diameters and stalk weights are greater for six of the nine varieties than for variety Co. 281. Compared with variety Co. 281 the sucrose is greater for two of the varieties, equal for another, and 99 and 98 percent of that of Co. 281 for two more. Six of the varieties have a better type of stalk than variety Co. 281. All these varieties have been tested for 3 or more years, but as there has been difficulty in getting them to flower, progeny of crosses of these varieties have not yet been received for testing for borer resistance.

The comparative susceptibility of parent varieties and their progeny has been studied for the last 6 years. More than 200 different parents were used in producing the approximately 16,000 seedlings on which borer-resistance observations have been made. Results of this work have made it possible to rate many of the parents and their progeny with respect to resistance to the borer and are sufficiently encouraging to warrant continuation of the work.

Field Report

Mr. Edward P. Munson, field representative of the American Sugar Cane League, presented the following report to the Executive Committee of the League on July 26, 1944.

"Gentlemen:

"As I reported to you at your last meeting in May, the Federal Experiment Station at Houma has 10 test fields and the State Experiment Station at Baton Rouge has 8, making a total of 18.

"In addition to these there are 11 Federal and 8 State secondary test fields, or a total of 19, and 1 Federal and 1 State primary test fields; making a grand total of 39 tests fields.

"There were 40 of these test fields, but the plot of S. S. Pierce, near Bunkie, was damaged by the freeze of mid December, and was plowed out.

"I have called on all the cooperative growers and with the exception of three, have detailed reports covering all the acreage. I have not been able to obtain the data from the three above referred to, although I have made several visits and phone calls.

"In addition I have prepared a detailed list showing the locations and amounts of the seven unreleased varieties that have been recommended by the Contact Committee for increase. Aside from the Federal and State plots, on which I have no data, 34-139 has the largest acreage and distribution, 414 acres of this cane being now grown by 28 growers. 34-92, with an acreage of 34, and 36-105 with an acreage of 11, is being grown by 20 growers; 22 acres of 36-55 by 19, 1.8 acres of 36-183 by 3; 1.1 acres of 36-13 and 1.0 acre of 36-19 by 3.

"It is my purpose to visit each of the co-operative growers to urge them to make the recommended plantings and see to it that the growers who do not have the proper seed cane, be supplied.

"With few exceptions the test fields are in good shape and the growers interested. I believe the few who have not shown much interest will show more in the future.

"I have been asked by several good planters to request that a test plot be started on their property and I recommend that this be done. We can, and I think should have several additional plots.

"I inspected several of the test plots for chlorotic streak but found none. The cane is too far advanced at this time to accurately detect chlorotic streak."

Official Release

(Sugar Beet Farming Practices for 1944)

Determination of Farming Practices to Be Carried Out on Farms in Connection With the Production of Sugar Beets During the Crop Year 1944.

Pursuant to the provisions of subsection (e) of section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Farming practices in connection with the production of sugar beets during the crop year 1944—(a) *For farms in States other than California.* The requirements of subsection (e) of section 301 of the Sugar Act of 1937, as amended, shall be deemed to have been fulfilled with respect to the production of the 1944 crop of sugar beets on any farm in a State other than California, if the producer and the county agricultural conservation committee certify that there has been carried out on land on the farm which is adapted to the production of sugar beets, not less than one-half acre of soil-conserving practices for each acre of sugar beets planted on the farm for harvest in 1944 for the extraction of sugar: *Provided, however,* That not in excess of 75 percent of the foregoing requirements in connection with rented acreage which would otherwise be part of anothere farm many consist of practices carried out on such farm in excess of any practices required thereon.

For the purposes of paragraph (a) of this section:

(1) Each of the following shall be deemed to be one acre of soil-conserving practices:

(i) Maintaining until after July 1, 1944, one acre of a protective covering of adapted perennial or biennial legumes, adapted perennial grasses, or mixtures of such legumes and grasses.

(ii) Seeding in 1944 one acre of adapted perennial legumes (except alfalfa) or biennial legumes, adapted

perennial grasses, or mixtures of such legumes and grasses.

(iii) Seeding in 1944 one-half acre of adapted alfalfa.

(iv) Plowing under during 1944 one acre of a good stand and a good growth of an adapted green manure crop.

(v) Applying during 1944 eight short tons of animal manure.

(vi) Applying during 1944 to land on which sugar beets are planted for harvest in 1944, 75 pounds of net available nitrogen, potash and/or phosphoric acid in the form of commercial chemical fertilizer.

(vii) Protecting two acres of summer fallow from wind and water erosion in a manner which meets the requirements of the 1944 Agricultural Conservation Program for the State, but this practice shall be applicable only in the Red River Valley of Minnesota and North Dakota.

(2) Adapted perennial or biennial legumes, or adapted perennial grasses, or mixtures thereof shall be deemed to be those perennial and biennial legumes or perennial grasses or mixtures thereof which are commonly seeded in the community in which the farm is located, and adapted green manure crops or adapted cover crops shall be deemed to be those green manure crops or cover crops which are commonly used as green manure crops or cover crops in the community in which the farm is located.

(b) *For farms in California.* The requirements of subsection (e) of section 301 of the Sugar Act of 1937, as amended, shall be deemed to have been fulfilled with respect to the production of the 1944 crop of sugar beets on any farm in California if the producer and the county agricultural conservation committee certify that during the crop year 1944 peat land on the farm has not been burned unless the burning is approved by the county and state agricultural conservation committees as necessary to permit satisfactory crop production and that there has been carried out on land on the farm which is adapted to the production of sugar beets not less than one-half acre of the soil conserving practices approved in accordance with the provisions of subparagraph (2) of this paragraph for each acre planted to sugar beets for harvest for the extraction of sugar: *Provided, however,* That one-fourth acre of soil conserving practices shall be required for each acre planted to sugar beets on land which has not produced sugar beets since 1940, if a perennial legume was produced thereon in 1941 or if any legumes were produced thereon in 1942 or 1943; and three-eights acre of soil-conserving practices shall be required for each acre planted to sugar beets on land which has not produced sugar beets since 1941, if legume were proruced thereon in 1942 or 1943; and *Provided, further,* If practice (i), (ii), or (iii), specified in subparagraph (2) of this paragraph, or any combination of such practices, is used to meet the requirements with respect to all the sugar beets on the farm, one-sixth acre of soil-conserving practices shall be required for each acre planted to sugar beets on land which has not produced sugar beets since 1940, if a perennial legume was produced thereon in 1941, or if any legumes were produced thereon in 1942 or 1943; one-fourth acre of soil-conserving practices shall be required for each acre planted to sugar beets on land which has not produced sugar beets since 1941, if legumes were produced thereon in 1942 or 1943; one-fourth acre of soil-conserving practices shall be required for each acre planted to sugar beets on land which has not produced sugar beets since 1940; and one-third acre of soil-conserving practices shall be required for each acre planted to sugar beets on land which has not produced sugar beets since 1941: *Provided further,* That a portion of the acres of soil-conserving practices required for rented acreage of any farm which would otherwise be part of another farm may consist of acres of practices carried out on the latter farm in excess of any practices required thereon, but an acreage of soil-conserving practices equal to not less than 12.5 per cent of the acres planted to sugar beets on such rented acreage shall be carried out on the farm on which such rented acreage is a part in excess of any practices which would be required if such rented acreage were not a part of such farm.

For the purposes of paragraph (b) of this section:

(1) The term "crop year" means the calendar year, except where the grower requests that the crop year be a 12-month period beginning 120 days prior to the normal planting date of sugar beets for the community, in which case the crop year shall be such 12-month period, if approval is given by the county committee.

(2) Each of the following which is recommended by the county agricultural conservation committee and approved by the state agricultural conservation committee as a practice applicable to the county for preserving and improving fertility of the soil and for preventing soil erosion shall be deemed to be one acre of soil-conserving practices:

(i) Maintaining until after July 1, 1944, one acre of protective covering of adapted perennial or biennial legumes, adapted perennial grasses, or mixtures of such legumes and grasses.

(ii) Seeding during the crop year 1944 one-half acre of land to adapted perennial or biennial legumes, adapted perennial grasses, or mixtures of such legumes and grasses.

(iii) Seeding and maintaining until after December 31, 1944, one acre of a good growth and a good stand of an adapted cover crop, or plowing under during the crop year 1944 one acre of a good stand and a good growth of an adapted green manure crop.

(iv) Applying during the crop year 1944 eight short tons of animal manure.

(v) Applying during the crop year 1944 not less than eight tons (all dry weight) of leguminous crop residues.

(vi) Applying during the crop year 1944 three tons of lime, or 1,000 pounds of 18 percent gypsum or its sulphur equivalent.

(vii) Applying during the crop year 1944 to land planted to sugar beets, or to or in connection with the seeding of legumes except when seeded in rows to be cultivated, or to or in connection with the seeding of perennial grasses, 64 pounds of net available phosphoric acid in the form of commercial fertilizers.

(viii) Applying during the crop year 1944, either just before planting or during the growth of a crop of sugar beets, 75 pounds of available nitrogen and/or potash in the form of commercial chemical fertilizers.

(3) Adapted perennial or biennial legumes, or adapted perennial grasses, or mixtures thereof shall be deemed to be those perennial and biennial legumes or perennial grasses or mixtures thereof which are commonly seeded in the community in which the farm is located, and adapted green manure crops or adapted cover crops shall be deemed to be those green manure crops or cover crops which are commonly used as green manure crops or cover crops in the community in which the farm is located.

(4) Acres of soil-conserving practices (other than acreage qualifying under practice (i)) carried out to

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meet similar requirements prescribed for the 1943 sugar beet crop shall not be used to meet the requirements set forth herein for the 1944 crop.

(c) *General provision.* All the foregoing soil-conserving practices shall be carried out in accordance with the farming methods commonly used in the community in which the farm is located.

WILSON COWEN,
Assistant War Food Administrator.

Western Division Meets

The meeting of the Louisiana Sugar Producers' Club (Western Division) was called to order by President W. C. Kemper at 12:30 P. M. in New Iberia on July 7th. The following were present:

W. C. Kemper, President, Sterling-Shadyside Factories
S. C. Munson, Delgado Albania Factory.
J. W. Doll, Loisel Factory.
F. G. Blumenthal, Jr., Vida Factory.
Geo. L. Billeaud, Billeaud Factory.
J. R. Roane, Jr., Loisel Factory.
Serge Golodetz, Orange Grove Factory.
Jules M. Burguieres, Cypremort Factory.
Leon J. Landry, Iberia Sugar Coop.
Damas Moresi, Right Way Factory.
Emile A. Maier, Oaklawn Factory.
M. L. Marquette, Oaklawn Factory.
L. M. Folse, Oaklawn Factory.
J. C. Etheredge, Iberia Sugar Coop.
J. Malcolm Duhe, Duhe & Bourgeois Factory.
F. M. Burleigh, Duhe & Bourgeois Factory.
J. P. Duhe, Duhe & Bourgeois Factory.
John M. Caffery, Columbia Factory.
Paul G. Moresi, Vermilion & Erath Factories
Robert J. Landry, Jeanerette, La.
Harry J. Moresi, Jeanerette, La.
Leo P. Hebert, U. S. D. A., Houma, La.
Louis J. Begui, Jeanerette, La.
W. F. Giles, Adeline, La.
R. L. Brown, Louisa, La.
Robert E. Smith, Jeanerette, La.
Dr. George Arceneaux, U. S. D. A., Houma, La.
P. J. deGravelles, Co. Agent, Franklin, La.
Hugh Junca, Franklin, La.
Ed. LaSalle, New Iberia, La.
Joe Arcement, New Iberia, La.
W. E. Williams, Co. Agent, New Iberia, La.
J. C. LeBourgeois, Jr., New Orleans, La.
J. E. Minvielle, U. S. E. S., New Iberia, La.
Miss Louise Richard, W. M. C., Baton Rouge, La.
Dr. Marion B. Smith, L. S. U., Baton Rouge, La.
C. B. Gouaux, L. S. U., Lafayette, La.
C. J. Bourg, Washington, D. C.
Marcel J. Voorhies, New Orleans, La
Mr. Louvierre, New Iberia, La.

Mr. Harry J. Moresi of Jeanerette, Chairman O. D. T. Committee Perishable Food Crops Transportation comprised of the parishes of Iberia, Vermilion, Lafayette, St. Martin, Avoyelles and Rapides, explained the organization and duties of the Committee. It is intended to decentralize the work from the Baton Rouge office of O.D.T. with respect to tires, gasoline, parts and even new trucks. Some members of the committee in each parish will have full authority to act. The Committee headquarters will be maintained at the County Agent office in New Iberia.

Since the average age of trucks in the sugar belt is 10 years it will require full cooperation of truck owners and operators to maintain them in condition for efficient and dependable operation.

Mr. Louvierre discussed the truck tire problem and emphasized the necessity of attacking the problem early and in an organized way.

Mr. J. E. Minvielle, U. S. E. S. with offices in New Iberia discussed the new referral order with respect

to employment and requested that the field office be contacted for any assistance whatever.

Dr. Marion B. Smith, L. S. U., discussed the training of Bench-Chemists by L. S. U., stated that two courses would be offered,

1. At L. S. U. beginning August 1st.
2. At New Iberia beginning September 1st.

Mr. W. C. Kemper announced that he would resign as President of the Club effective the August meeting because of his leaving the Country. Mr. Kemper is severing his connection with Sterling and Shadyside and is going to Puerto Rico on a permanent basis.

Dr. George Arceneaux, U. S. D. A., Houma, Louisiana and Mr. C. B. Gouaux, L. S. U., Lafayette, La., discussed sugarcane varieties. The general trend of the discussions was that Co. 290 and Co. 281 are passing out of the picture and must be gradually replaced. The most promising varieties for the replacement are C. P. 29-103, C. P. 29-120 and C. P. 34-120.

Moving pictures were shown by County Agent W. E. Williams of New Iberia.

Mr. James F. Percy, Executive Secretary of the Louisiana Farm Bureau and Mr. C. J. Bourg, Vice-President and Washington representative of the American Sugar Cane League were introduced.

Legislative Committee Meeting

A meeting of the Legislative Committee and of the Incentive Payment committee of the American Sugar Cane League was held at 2 P. M., July 12, 1944, at the Agricultural Building in Thibodaux. Present were:

Members Legislative Committee

W. C. Kemper, presiding
W. F. Giles
R. H. Chadwick
William McCollam
E. N. Kearny
Frank L. Barker
L. A. Borne
D. W. Pipes, Jr.
Dubourg Thibaut
J. J. Munson
S. C. Munson

Members Incentive Payment Committee

W. C. Kemper
Frank L. Barker
J. J. Munson
George Blumenthal
J. J. Shaffer, Jr.
(a full attendance)

The following members of the Legislative Committee were absent:

George L. Billeaud
Leon J. Landry
W. Prescott Foster
E. J. Gay

There were also present: Mr. C. J. Bourg, Washington Representative of the League, Mr. Paul G. Borron, Jr., Legal Counsel, Captain William Chadwick, Mr. W. C. Byrne, of Realty Operators, Inc., Mr. C. S. Churchill, of Evan Hall Sugar Cooperative, and Mr. Marcel J. Voorhies, General Manager of the League.

The following problems were discussed in relation to their bearings on the Louisiana Sugar Industry.

1. The entering of Cuban sugar by the C. C. C. without the collection of the tarifff.
2. Price of Molasses.
3. Incentive Payment.
4. The place of quotas in the Sugar Industry.
5. Acreage Abandonment Payments.
6. Crop insurance with respect to sugar.

New Cane Varieties

The Contact Committee of the American Sugar Cane League met with representatives of the Houma Sugar Cane Station, the Louisiana Experiment Station and sugar cane growers at Houma on July 20th.

The Committee recommended that the following varieties of sugar can be increased.

C.P. 36-55 —Increased to approximately 5 acres.
C.P. 34-92 —Increased to approximately 5 acres.
C.P. 34-139—Increased to approximately 5 acres on *heavy clay soil* in the *lower parishes*. This variety is not recommended for increase in the *upper parishes* or *light soils*.
C.P. 36-105—Increased to the maximum of the seed supply.

The Committee also recommended that the following varieties be introduced in the Secondary Increase Stations:

C. P. 36-13 C. P. 36-19 C. P. 36-183

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An Analysis of Results of Field Tests of Important Sugarcane Varieties During Recent Years

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Sugarcane varieties now available for culture in Louisiana permit satisfactory utilization of a wide range of soils. It is obvious, however, that success under any given set of conditions will depend greatly on the attention given to the selection of best suited varieties. Of primary importance at this time is an accurate appraisal of C. P. 34/120 and a decision as to the prominence to be accorded this variety in plantings to be made in the near future. This in turn raises the question as to corresponding adjustments to be made among plantings of other varieties. This report presents information bearing on the selection of varieties for planting during the coming season.

C. P. 34/120 has been extensively tested under Louisiana conditions in comparison with other important varieties during the past three years. This involved three annual series of plant cane tests, two annual series of first stubble tests and one series of second stubble tests at each of several stations. The data which have been published from year to year were [2], [3], [4] assembled and analyzed with a view of comparing the relative suitability of C. P. 34/120 and other important commercial varieties for culture under the various conditions involved.

Tables 1 and 2 summarize results of tests of 7 important varieties in plant cane and first stubble at six locations on light soils during 1941, 1942 and 1943. Varietal selections for the great bulk of the light soil acreage to be planted this fall will be made from among these. Co. 281 weaker, by far, than any variety of this group will apparently lose its commercial importance with the availability of C. P. 34/120 for windrowing purposes, therefore a discussion of merits and shortcomings of Co. 281 is of no particular importance at this time.

In order to facilitate comparisons, varietal averages are expressed as percentages of the group mean. Group means are given in pounds of sugar thus readily permitting the conversion of varietal yields to actual values. Underlying yields of sugar per ton of cane were based on analysis of juice from field samples with appropriate adjustments for varietal differences in milling qualities. Methods of conducting milling tests and making sugar yield calculations have been described in previous publications. [6], [7].

It will be noted that C. P. 34/120 led all other varieties in indicated yield of sugar per acre (table 1) with an average, for all tests, of 118.6% of the group mean. C. P. 29/116 was next with an average of 109.4% closely followed by Co. 290. C. P. 29/120, 29/103, 28/19 and 29/320 ranked next in the order named.

In indicated yield of sugar per ton of cane (table 2) C. P. 28/19 led with an average of 111.1%. C. P. 29/320 was next with an average of 104.3% followed by C. P. 29/120 with an average of 102.7%; C. P. 29/103 with an average of 100.3 and C. P. 34/120 with an average of 98.8. Co. 290 and C. P.

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In This Issue

An Analysis of Results of Field Tests of Important Sugarcane Varieties During Recent Years ..... Cover

Washington Comments 201

Measures Being Taken to Obtain Additional War Prisoners to Work in Planting and Harvesting of Cane 202

Proportionate Shares For 1945 Mainland Cane Sugar Crop 203

29/116 were the lowest and ranked in the order named. The position of C. P. 34/120 places it approximately on a par with Co. 281.

For a completely satisfactory comparison of the different varieties it is necessary to know to what extent trends displayed in average yields have been maintained at individual stations. It is of course to be expected that results at individual stations will show some departure from average results. Such departures may spring from: (1) random fluctuations in the basic data or (2) certain environmental factors causing some varieties to give a relatively better per-

Table 1.—Summary of varietal yields of sugar per acre in plant cane and first stubble tests at 6 stations in Louisiana during 1941-1943, inclusive

Variety	Relative yield of sugar per acre (Percent of General Mean)	Index of differential response (variety x station Interaction term expressed as a pereentage of the general mean)					
		Raceland	Greenwood	Oaklawn	Albania	Erath	Alma
C.P. 34/120	118.6	—3.6	—1.8	+4.3	—5.1	—5.3	+11.5†
C.P.29/116	109.4	+3.5	—9.1*	—1.7	—2.0	+.0.5	+8.7*
Co. 290	107.6	—2.7	+3.4	—5.2	+12.9†	+14.0†	—22.3†
C.P. 29/120	99.1	+5.5	+1.7	+4.4	—12.6†	+0.3†	+0.8
C.P. 29/103	91.7	—6.7	—1.2	+1.9	—2.0	—0.8	+8.7*
C.P. 28/19	89.1	+0.2	+2.7	+0.3	—0.7	+4.7	—7.3
C.P. 29/320	84.6	+3.9	+4.3	—4.0	+9.4*	—13.4†	—0.1
Mean (pounds)	4585	5354	4951	3697	4304	3618	5586

* Moderately significant.
† Highly significant.

formance at some of the stations than at the others. Through appropriate statistical analysis it is possible to establish the degree of probability that the departure from average results observed in yields from any given station may be due to factors operating at random, or to causes limited to that particular station *under conditions of the experiment.*

Under "Index of differential response" in tables 1 and 2 are given values (plus and minus) to which average results obtained with any given variety at different stations have departed from the corresponding over-all relative value for the particular variety.

Table 2.—Summary of varietal yields of sugar per ton of cane in plant cane and first stubble tests at 6 stations in Louisiana during 1941-1943, inclusive

Variety	Relative yield of sugar per ton of cane (Percent of General Mean)	Index of differential response (variety x station Interaction term expressed as a percentage of the general mean)					
		Raceland	Greenwood	Oaklawn	Albania	Erath	Alma
C.P. 28/19	111.1	—6.7†	—3.9†	—0.5	+0.8	+5.3†	+5.0†
C.P. 29/320	104.3	+1.2	—0.1	—2.5*	—0.9	+1.4	+1.0
C.P. 29/120	102.7	—0.3	—0.1	—3.1*	+3.5†	+0.5	—0.5
C.P. 29/103	100.3	—1.5	—1.2	+0.4	+2.8*	—0.6	0
C.P. 34/120	98.8	+1.6	+1.1	+0.3	—1.2	—3.8†	+2.1
Co. 290	94.0	+5.1†	+3.3†	+0.3	0	—1.4	—7.2†
C.P. 29/116	88.8	+0.6	+0.9	+5.1†	—4.9†	—1.4	—0.3
Mean (pounds)	194.9	177.3	181.5	207.9	206.6	209.0	187.2

* Moderately significant.
† Highly significant.

Moderately significantly departures are indicated by single asterisks and highly significant departures by single daggers. The values shown, like the corresponding average values, are expressed in percentage of the group mean and have been calculated on the basis of Variety x Locality interaction term. [5], [1]

The derivation of "Index of differential response" may be best illustrated by assuming that relative varietal yields of sugar as given for the mean of all tests in column 1 of table 1 have been calculated for each individual station. Any given value (plus or minus) shows approximately how much the corresponding relative value for that station was above

[1] For detailed method of calculation the reader is referred to the article cited.

(+) or below (—) the general mean of the particular variety. (Actually the values shown were derived in a different manner but the agreement is close enough for practical purposes). By adding plus values for any given station to corresponding general varietal averages and subtracting negative values from corresponding general varietal averages it is possible to approximately reconstruct mean relative varietal yields for any given station. As an illustration, for Raceland (table 1) the varietal yield of sugar per acre for C. P. 34/120 may be approximated at 115.0 (118.6—3.6). that of C. P. 29/116 at 112.9 (109.4 + 3.5) etc.

Results shown in columns 2-7, inclusive, of table 1 indicate that some varietal yields at individual stations have departed significantly from trends maintained in the average of all tests. Of special interest in this connection are results obtained with Co. 290 and C. P. 34/120 at Albania and Erath. It will be noted that at each of these stations Co. 290 surpassed C. P. 34/120 by an appreciable margin and the departure from mean results may be of fundamental importance in the selection of varieties for the conditions involved. On the other hand the significantly "better than average" performance of C. P. 34/120 at Alma and the exceedingly poor relative performance of Co. 290 (table 1) place the superiority of C. P. 34/120 under those conditions considerably above the average maintained in all tests. Other differential trends considered worthy of note are: the relatively good performance of C. P. 29/103 at Alma and of 29/320 at Albania; the relatively poor results obtained with C. P. 29/120 at Albania and with 29/320 at Erath.

In indicated yield of sugar per ton of cane (table 2) C. P. 28/19 and Co. 290 showed the widest departures from mean trends at individual stations. C. P. 28/19 maintained relatively high positions at Erath and Alma and relatively low positions at Raceland and Greenwood, while the opposite was true in the case of Co. 290. Other trends which may be considered worthy of note are: C. P. 29/120, relatively high at Albania and relatively low at Oaklawn; 34/120 relatively low at Erath; C. P. 29/116, relatively high at Oaklawn and relatively low at Albania.

A word of caution in regard to the interpretation of differences in varietal performance from station to station should perhaps be interposed here. It cannot be emphasized too strongly that the significance of a trend displayed at any given station is limited strictly to the condition of the experiment and cannot be taken as a basis for generalizations applying to the entire locality. Appreciably different results might have been obtained at a different site on the same plantation. For instance the strongly "lower than average" response of C. P. 28/19 in yield of sugar per ton of cane at Raceland was apparently due, in a large measure, to excessive lodging of the variety in several of the tests. On sites of lower soil fertility on the same plantation the variety would have probably made a relatively better showing in this regard. On the other hand, the fact that a trend in the same direction, though to a lesser degree, was also maintained at nearby Greenwood, suggests that a basic locality factor may be involved.

Table 3 summarizes results of second stubble tests during 1942 and 1943. In indicated yield of sugar per acre, C. P. 34/120 was first with an average of 128.1% of the group mean, and C. P. 29/120 was next with an average of 114.5%. C. P. 29/116 and Co. 290 ranked next in order with 108.1% and 95.1% respectively. C. P. 28/19, 29/320 and 29/103 were the lowest and ranked in the order named.

Table 3—Summary of varietal yields of sugar in second stubble tests at several stations* in Louisiana during 1942 and 1943

Variety	Relative yield of sugar per acre**	Relative yield of sugar per ton of cane**
C.P. 34/120	128.1	101.9
C.P. 29/120	114.5	105.4
C.P. 29/116	108.1	88.2
Co. 290	95.1	88.4
C.P. 28/19	88.6	107.6
C.P. 29/320	88.4	107.2
C.P. 29/103	77.3	101.2
Mean (pounds)	3021	169.7

** Percent of general mean.
* Freenwood, Raceland, Albania, Stella, and Alma.

In indicated yield of sugar per ton of cane C. P. 28/19 ranking first with 107.6% was insignificantly above C. P. 29/320 with an average of 107.2%. Slightly under these was C. P. 29/120 with an average of 105.4%. C. P. 34/120 and 29/103 came next with 101.9% and 101.2% respectively. Co. 290 and C. P. 29/116 were the lowest with 88.4% and 88.2% respectively.

Since varieties in second stubble tests (table 3) were the same ones included in plant cane and first stubble tests (tables 1 and 2) significant departures in relative yield of sugar per acre for any given variety as compared with plant cane plus first stubble results may be attributed largely to differences in stubbling qualities. On that basis C. P. 29/120 displayed outstandingly superior stubbling qualities as indicated by a rise from 99.1% in plant cane-first stubble yields to 114.5% in second stubble yields. C. P. 34/120 rose from 118.6% to 128.1%. Those displaying significantly inferior stubbling qualities were C. P. 29/103, with a drop from 91.7% in plant cane-first stubble yields to 77.3% in second stubble yields, and Co. 290 with a drop from 107.6% to 95.1%.

Differences in relative yield of sugar per ton of cane displayed by individual varieties between plant cane-first stubble results (table 2) and second stubble results (table 3) are probably due in part to varietal differences in maturing characteristics. Second stubble tests are ordinarily harvested during the latter part of October while first stubble and plant cane tests are usually harvested between early November and mid December. During the early part of the grinding season certain varieties, notably C. P. 29/320, will ordinarily occupy a relatively higher position as to sugar content in comparison with other varieties, than at a later period. As another factor might be mentioned differences in stubbling qualities. Prolonged suckering usually associated with thin stands tends to depress the sugar content of a variety below relative levels maintained under conditions of more satisfactory stands.

Table 4.—Summary of varietal yields of sugar in plant cane and first stubble tests on heavy soils in Louisiana at several stations* during 1941-1943, inclusive

Variety	Relative yield of sugar per acre**	Relative yield of sugar per ton of cane**
C.P. 34/120	120.7	102.6
C.P. 29/120	109.6	110.9
C.P. 29/116	105.9	92.9
C.P. 28/11	96.3	102.8
C.P. 29/103	95.1	104.9
Co. 290	94.0	93.8
C.P. 807	78.3	92.1
Mean (pounds)	4156	186.8

** Percent of general mean.
* Raceland, Greenwood, Oaklawn, Alma and Houma Station.

Table 4 summarizes results of combined plant cane

and first stubble tests of 7 important varieties at several stations on heavy soils during 1941-43, inclusive. It will be noted that 5 of the varieties tested on light soils were also included in tests on heavy soils. In addition C. P. 807 and 28/11 were substituted for C. P. 28/19 and 29/320, the latter two having proved poorly adapted to heavy soils.

C. P. 34/120 again led all other varities in indicated yield of sugar per acre with an average of 120.7%. Next in order followed C. P. 29/120 with an average of 109.6% and C. P. 29/116 with an average of 105.9%. C. P. 28/11, 29/103 and Co. 290 gave closely similar mean yields as indicated by averages of 96.3%, 95.1% and 94.0%, respectively. C. P. 807 was the lowest with an average of 78.3%.

In indicated yield of sugar per ton of cane C. P. 29/120 ranked first with an average of 110.9% and C. P. 29/103 was next with an average of 104.9%. C. P. 28/11 and 34/120 averaging 102.8% and 102.6%, respectively, were followed by Co. 290, C. P. 29/116 and C. P. 807 with averages of 93.8%, 92.9% and 92.1%, respectively.

Time-Related Changes in Varietal Performance

In a report previously published[5] there has been cited evidence indicating that relative yields of certain of the varieties now in cultivation have *decreased* from year to year. As possible explanation, the building up of the percentage of infection within the variety of a disease such as mosaic[10] or the development of specifically injurious strains of organisms causing a disease such as red rot[1] could be offered. But regardless of the underlying causes evidence supplied by field tests shows rather plainly that some of the varieties of present commercial importance are now giving relative yields which are significantly lower than yields formerly produced, and it is believed that this information may be of importance in estimating the present and future usefulness of the varieties involved.

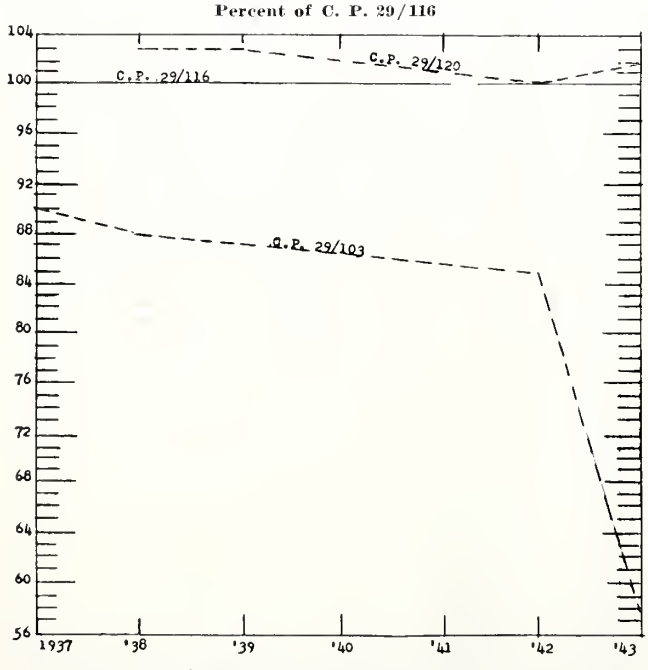

FIG. 3—Second stubble yields of sugar per acre from C. P. 29/120 and C. P. 29/103 in relation to yields from C. P. 29/116 during 1937-1943, inclusive.

Since the relative performance of a variety must be expressed in terms of the parallel performance of one or more other varieties it is obvious that a change in observed relationship may reflect a change in either one or both varieties. In a study previously reported[5] it was shown that, of the varieties which have been in our tests for a number of years, C. P. 29/116 has given evidence of the greatest stability in yield performance. It is therefore considered a convenient standard for measuring possible drops in relative yields of other varieties.

Figure 1 gives a graphical representation of annual average yields of sugar per acre from plant cane and first stubble of Co. 290 converted to percentages of corresponding C. P. 29/116 annual averages for the period 1937-1943, inclusive. Figure 2 shows corresponding relationships in second stubble results obtained over the period 1938-1943, inclusive. The straight line running diagonally in each case is the line of "least squares" and its departure from the horizontal may be taken as a measure of the linear drop from year to year.

It will be noted that the yield of Co. 290 in relation to C. P. 29/116 dropped materially in plant cane-first stubble tests over the period involved. The annual linear drop was at the rate of 2% of C. P. 29/116 yield or approximately 100 pounds of sugar per acre. In the case of second stubble, the relative yield of Co. 290 dropped at the annual rate of 6.37% of C. P. 29/116 yield or approximately 258 pounds per acre.

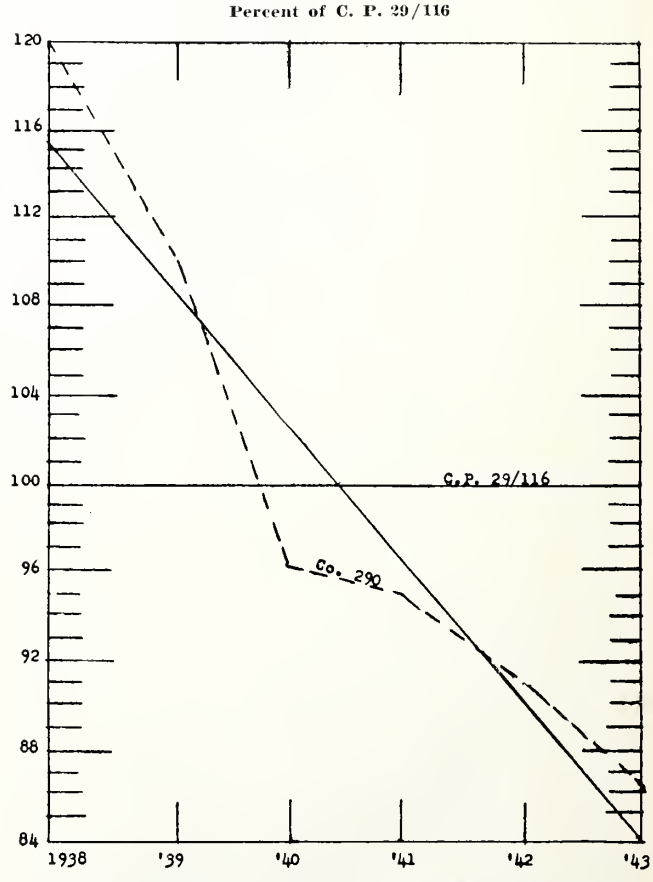

FIG. 2—Second stubble yields of sugar per acre from Co. 290 in relation to yields from C. P. 29/116 during 1938-1943, inclusive.

Figure 3 shows yields of sugar per acre from C. P. 29/120 and 29/103 in relation to C. P. 29/116 yields in second stubble tests during recent years. It will be noted that C. P. 29/103 has given considerable evidence of declining yields in comparison with C. P. 29/116 while relative yields from C. P. 29/120 have

maintained a relatively uniform relationship to yields from C. P. 29/116. In plant cane and first stubble tests yields from neither C. P. 29/103 nor C. P. 29/120 gave evidence of any significant decline in relation to C. P. 29/116.

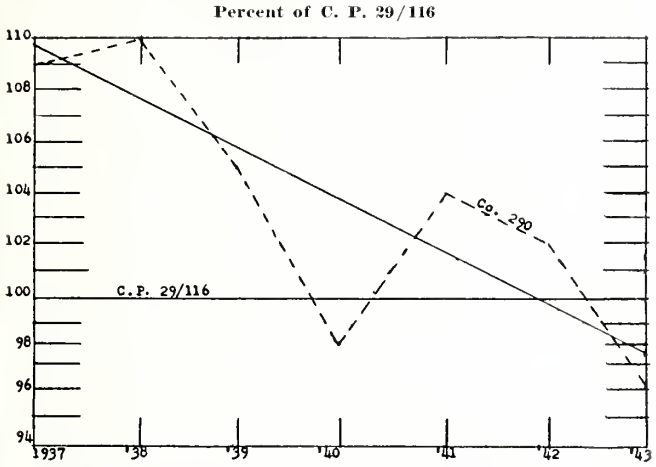

FIG. 1—Plant cane—first stubble yields of sugar per acre from Co. 290 in relation to yields from C. P. 29/116 during 1937-1943, inclusive.

Summary and Conclusions

The high level of productivity extensively maintained by C. P. 34/120 during the period covered by this study indicates a wide range of adaptability under Louisiana conditions. In view of acceptable windrowing qualities displayed by this variety,[8] substitution of it for Co. 281 seems obviously advisable. Because of distinct advantage in production of sugar per acre C. P. 34/120 should also largely replace C. P. 29/320 heretofore the dominant variety in the northern parishes.

Substantial superiority of C. P. 34/120 over Co. 290 and C. P. 29/116 in yield of sugar per acre and in sugar content was widely maintained, therefore a shift in acreage from the latter two varieties to C. P. 34/120 is indicated. In arriving at the extent to which C. P. 34/120 should replace Co. 290 and C. P. 29/116 a number of factors should be considered: (1) Relative yields of Co. 290 during recent years have shown significant declines from year to year. Should this trend continue, future yield advantages in favor of C. P. 34/120 may become still greater. (2) C. P. 34/120 has demonstrated the greatest superiority to the other two varieties in tests on heavy soils. (3) In light soil tests at Albania and Erath Co. 290 surpassed C. P. 34/120 in indicated yield of sugar per acre from plant cane and first stubble. (4) While C. P. 34/120 has proved quite generally well adapted to mechanical harvesting it is, on account of its extremely long stalk, occasionally subject to severe lodging. Under such conditions mechanical harvesting may prove extremely difficult. (5) C. P. 34/120 has a milling factor of 0.98 as compared with factors of 1.06 and 1.04 for Co. 290 and C. P. 29/116, respectively. The effect of the varietal shift on mill capacities should be considered.

C. P. 28/19 grown largely for early milling has shown a substantial advantage over C. P. 29/320 its nearest competitor in sugar content and has generally surpassed the latter in yield of sugar per acre. But the very distinct advantage of C. P. 29/320 over C. P. 28/19 with respect to mechanical harvesting should no doubt receive considerable weight at this time.

In studies reported by Simon[9] C. P. 29/120 and 29/103 suffered relatively less deterioration than other commercial varieties following freeze injury. This observation was confirmed by plantation experience during the past winter. In addition, cane of these two varieties suffered little apparent injury to the stubble from the 1943 freeze, even where the frozen cane stood on the stump for a prolonged period of time. These advantages are considered especially important at this time because of present tendency to keep windrowing to a minimum on account of the shortage of labor. In comparing these two varieties it will be noted that C. P. 29/120 has displayed a considerable advantage in average indicated yield of sugar per acre with generally higher sugar content. The superiority of C. P. 29/120 in production of sugar per acre was especially pronounced in second stubble tests (table 3) and in tests on heavy soils (table 4). It should be mentioned also that C. P. 29/103 has given evidence of declining yields in second stubble crops. (Fig. 3).

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Washington Comments

By C. J. Bourg

The War Food Administration announced on August 5, 1944, a price support program for the 1945 Louisiana sugarcane crop, the purpose of which is to assist growers to increase production of sugar and molasses. Under the price support program for the 1945 Louisiana sugarcane crop, growers will receive a payment of about $1.60 per ton of sugarcane of the average quality of recent years or $1.53 per ton of standard cane. In recent years, the sucrose content in sugarcane has been higher than that of standard cane, so that with a continuation of the high sucrose content, the actual incentive is more likely to be $1.60 or above.

This announcement of the WFA will certainly encourage Louisiana sugarcane growers to prepare additional acreage for the plantings that are to be made within the next sixty days. The announced $1.60 incentive payment should increase the total price of

sugarcane for the 1945 crop above $7.00, based on the following:

$3.83 from the processor on sugar value
.32 from the processor on molasses value
1.30 conditional payment under the Sugar Act
1.60 incentive payment from WFA

$7.05 total

For the 1944 crop, the incentive offered is 85 cents per ton which means that the price in prospect is $6.30 per ton of sugarcane for this year. All frozen cane will be subject to the full incentive payment, provided the cane is milled for the production of sugar or molasses. This provision will give the grower some insurance against a total loss of cane in the event of a freeze, and will also make it worthwhile for the grower to clear his fields promptly.

The American Sugar Cane League has been very proud of the splendid record of sugar production made by Louisiana during the war years and it is our hope that the plantings about to be made will cover enough acreage to maintain a high average of war production.

* * * * *

In recent weeks, the OPA has had meetings with cane refiners and with beet sugar processors with a view to discussing the desirability of establishing a uniform price for refined sugar throughout the United States. Since March 1942, the price of refined sugar in the northeastern states, served by the ports of New York, Boston and Philadelphia, has been $5.60 per hundred, while the price of refined sugar in other parts of the United States has been on a $5.45 basis. Southern refiners have contended that the differential in price was only justified as a temporary measure to meet the emergency in 1942 created by ocean transportation difficulties which reduced drastically the ability of northeastern refiners to obtain off-shore raw sugars. We were hopeful that an announcement with respect to uniform prices, as they may affect refined sugar as well as raw sugar, would be announced in time for this issue of the Sugar Bulletin. We anticipate an early decision and announcement.

Measures Being Taken to Obtain Additional War Prisoners to Work in Planting and Harvesting of Cane

On August 7th and 8th, Senator John H. Overton took up with Brigadier General Archer L. Lerch, Provost Marshal General in Washington, Major Thomas G. Gammie, Works Projects Branch of the Prisoner of War Division, and Brigadier General Louis F. Guerre, Director of the Security and Intelligence Division at the Eighth Service Command, Dallas, Texas, the very important question of supplying agricultural prisoners of war labor for Louisiana.

Senator Overton states that the allocation of prisoner of war labor is made by the Eighth Service Command on requisitions of parish agents and of Mr. H. C. Sanders, State Director of the Agricultural Extension Service in Baton Rouge.

General Guerre informed Senator Overton August 8th that there are 4000 prisoners of war laborers available to Louisiana for agricultural purposes and that he expects shortly an increase of not less than 1000.

The prisoner of war labor is to go first to the rice fields; then to cotton; then in early September, into

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the sugarcane area for plantings. And in October down to Christmas, for sugarcane harvesting.

The following camps in the rice area are complete or practically complete:

Iowa, Gueydan, Sulphur and Jennings.

The following are under construction or approved and soon will be under construction:

Kaplan, Rayne, Belle City and Edgerly.

In the sugarcane belt, the Provost Marshal General advises Senator Overton that the following camps have been established:

Franklin, Lockport, Donaldsonville, Mathews, Houma, Hahnville and Port Allen and that several more have been approved and will be put under construction in the sugarcane area; also camps have been established at West Monroe and Tallulah in the cotton area.

The prisoner of war labor is obtained from base camps at Claiborne, Livingston, Polk and Ruston.

Senator Overton suggests that our farmers who need prisoner of war labor should contact their parish agent or State Director Sanders.

Editor's Note: The Labor Committee of the American Sugar Cane League will meet on August 16th with the Agricultural Extension officials at Baton Rouge to discuss prisoner of war labor. Representatives of the Army and the Labor Advisory Committee of the State Farm Council have been invited to this meeting.

Official Release

Proportionate Shares For 1945 Mainland Cane Sugar Crop

Pursuant to the provisions of section 302 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

802.26g Proportionate shares for the mainland cane sugar area for the 1945 crop—(a) *Farm proportionate share.* The proportionate share for the 1945 crop for each sugarcane farm in the mainland cane sugar area shall be the number of acres planted thereon for the production of sugarcane to be marketed (or processed by the producer) for the extraction of sugar or liquid sugar during the 1945 crop season.

(b) *Tenant and Sharecropper protection.* Notwithstanding the establishment of a proportionate share for any farm under paragraph (a) above, eligibility for payment of any producer on the farm shall be subject to the following conditions:

(1) That such producer shall not have entered into any leasing or cropping agreement for the purpose of diverting to himself or other producers any payment to which tenants or sharecroppers would be entitled if their 1944 leasing or cropping agreements were in effect.

(2) That such producer shall not have interfered with any contracts entered into by tenants or sharecroppers for the sale of their sugarcane or their share of the sugarcane produced on the farm.

(Sec. 302; 50 Stat. 910; 7 U. S. C., 1940 ed. 1132; E. O. 9322, 8 F. R. 3807; E. O. 9334, 8 F. R. 5423)

Issued at Washington, D. C., this 3rd day of August 1944.

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THE SUGAR BULLETIN

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We stand for the encouragement of Home Industries as against foreign Competition

Vol. 22 NEW ORLEANS, LA., SEPTEMBER 1, 1944 No. 23

Washington Comments

(By C. J. Bourg)

The problems of obtaining the labor necessary for planting operations now going on and for harvesting operations to be conducted between now and January have been receiving constant attention in recent weeks.

The war prisoner situation has been very difficult to work out but the fact that the Labor Committee of the American Sugar Cane League started early in their efforts should bring about results in time for meeting the needs as they arise.

Frankly, the situation is still disturbing and the encouraging possibilities are too far removed from realization for us to feel inclined to give the impression to cane growers that the situation is safe. It can be said that if the present plans and efforts of the Labor Committee are successful, this most difficult and critical labor situation should be at least improved.

The League has reliable information that as of September 1st there will be 5000 or more war prisoners available for agricultural work in Louisiana; for the time being, there is no intention to remove war prisoners from existing camps in the sugar area. However, the requirements of the rice, cotton and cane crops total 9200 war prisoners needed. The Labor Committee has requested the State Director of Extension to make requisition for this full number to be assigned to Louisiana camps for September, October and November, with 7900 in December.

Senator Overton and Senator Ellender have received assurances from the Provost Marshal General that additional war prisoners may be allocated to the Eighth Service Command upon the requisition of the Commanding General.

The Senators have received assurances from the Commanding General that he is willing to make the assignments provided that applications are submitted by farmers through the county agent and requests submitted to him through the State Director of Extension.

All of this procedure requires a certain amount of time and delay but with assurances of cooperation all along the line, it is not an impossible program.

We hope to be able to report further progress in the next issue of the Sugar Bulletin.

* * * * *

Changes in government regulations frequently reflect the fluctuations in wartime conditions.

Recently the zoning of the U.S.A. for purposes of sugar distribution was suspended temporarily after having been in effect since early 1942. Trade journals tell about refiners in different parts of the country being from six to ten weeks behind in their deliveries. The requests of housewives for sugar allowances to be used in canning and preserving have been added to the ordinary demands of consumers and industrial users. Shortage of labor everywhere has been the chief cause of slowed-down deliveries.

The American consumer was fortunate in 1941, 1942 and 1943 that the continental beet and cane sugar producers were able to contribute so generous-

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Marcel J. Voorhies, Editor

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The American Cane Growers' Assn.
The Producers & Mfrs. Protective Assn.

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In This Issue

Washington Comments.....Cover
Procedure to Obtain Lumber..... 206
Some Comparative Test Field Averages and Results of Important Commercial Canes..... 208
WFA Announces 1945 Sugar Beet and Sugar Cane Price Support Program..... 211

ly to orderly and ample sugar distribution because in that period, off-shore sugars were being imported in reduced quantities and under serious difficulties.

The short beet crop of 1943 has limited the ability of the continental industry to furnish as large a proportion of sugar this year as they did in previous war years. The tightness in sugar distribution will naturally be relieved as the continental production comes into the market with 1944 harvesting operations already begun in California and soon to be in full blast throughout the sugar producing states.

Procedure to Obtain Lumber

August 18, 1944

The following letter was recently released by your Priority Committee:

Dear Sirs:

Effective August 1, 1944, all lumber was placed under strict allocation by the issuance of Limitation Order 335. At the time that this regulation was issued M-208 was automatically cancelled.

This regulation as you will note refers to Class 1 and Class 2 consumers. A class 1 consumer is defined as any individual or corporation who receives more than 50,000 feet of lumber in any Quarter for any one inventory point. A class 2 consumer is one who receives less than 50,000 board feet at any one inventory point in any Quarter. Please note particularly that reference is made to an inventory point. In other words, if a processor maintains more than one inventory, and despite the fact that the receipts of lumber for all inventories are more than 50,000 per Quarter combined he nevertheless is a Class 2 consumer if the receipts of lumber at individual inventory points are below 50,000 board feet per Quarter.

Please note the certification on Page 3 of L-335 as amended June 23, 1944, which must be used under this regulation to acquire lumber. Orders placed for lumber must be certified in this manner, plus the use of the AA-1 rating assigned to the Sugar Industry under CMP 7.

Farmers, exclusively engaged in farming operations, as previously pointed out in Mr. McIntre's letter of April 24, 1944, (*Sugar Bulletin July* 1, 1944, *page* 178) are not permitted to use rating under CMP 7, but must rely on priority assistance embraced in the regulations referred to in his letter.

I understand that lumber can also be obtained through the AAA Parish Boards. However, I am not familiar with this method of acquiring lumber.

Yours very truly,

Signed Will J. Gibbens, Jr.
Chairman, Sub-Committee on Priorities

The Louisiana Building Material Dealers Association has kindly supplied the following article which is of special interest to all farmers:

As a farmer you are a consumer of lumber. For that reason you are very much concerned with, and effected by, the new lumber control order known as L-335.

Lumber is the most critical item in the war effort and has been for the past year. Of the 700,000 items purchased by the Army and Navy, more than 550,000 of them consume lumber or its by-product wood fiber. To give you some idea of the tremendous quantities of lumber required in the war effort the following examples will be interesting.

Every freighter that leaves for the European or South Pacific war theater requires 10 to 12 carloads of lumber for dunnage and stowing.

Every item shipped abroad whether it be a parcel of drugs, jeeps, tanks or planes must be boxed and crated before shipment. The amount of lumber needed for boxing and crating has expanded from about 6½ billion feet in 1942 to over 16 billion feet for this year. This represents just about 50% of the entire lumber production for the entire country this year.

When we took Naples it required more than 8 million feet of lumber to make the docks available for unloading of military supplies.

The docks at Cherbourg, and Caen, will take far more lumber than used at Naples and we will be needing additional quantities at ports such as Brest and Marseille.

Because far too much lumber has been wasted in unnecessary new construction and remodeling purposes during the past two years, it became necessary for the War Production Board to take drastic action to allocate lumber to the most essential uses. It was considered that farm production and the raising of crops was important only behind the direct military effort and for that reason the War Production Board turned over to the War Food Administration approximately one billion feet of lumber to be available to the farmers during the third quarter of 1944. The amount of lumber to be made available in the 4th quarter will possibly be in the neighborhood of 500 million feet. The War Food Administration have full authority in the operation of the lumber program for farm uses and have established rules and regulations under which the farmer may secure lumber for essential needs.

Louisiana was given an allocation of approximately 8 million feet of lumber for the 3rd quarter of this year. Each local parish office of the AAA after conferring with the lumber dealers in the parish determined the amount of lumber which they felt would be necessary to supply the needs of the farmers in that particular parish. When their application went to the state office of the AAA they were given authorization to certify farm lumber up to that amount. If it is found that the farmers in the parish will require a greater amount in the quarter a subsequent application may be made as the state office keeps a reserve supply available for such emergencies.

As a farmer you will be able to secure lumber in the following manner:

When you need an amount less than 300 bd. feet. for your farm you may go to the lumber dealer and simply by signing an application form known as FL-200 you may secure this quantity of lumber.

Many parishes have established a regulation whereby if you need an amount not exceeding 1,000 bd. ft. of lumber the dealer can telephone to the parish office of the AAA and secure from them verbal authorization to let you have this amount of lumber simply by signing the application form FL-200.

However, where this practice has not been adopted by a local parish board of the AAA, when any amount of lumber you need exceeds 300 board feet it is required that you first go to the office of the AAA, fill out an application form FL-200, receive from them certification which has a number FL-201 and this certificate you take to the local lumber dealer and secure the amount of lumber which has been authorized.

There is no maximum amount of lumber that you will be permitted to have. Provided you do not exceed the limitations of the construction order L-41 you will be permitted to buy whatever lumber is required for repair and maintenance or new construction of your farm production buildings.

With regard to your home residence. The AAA office has no authority to certify lumber either for repair or maintenance or for new construction on the dwelling itself.

At the present time tenant houses on the farm have been ruled by the War Food Administration to be dwellings and consequently the AAA is not permitted to certify the purchase of lumber for repair and maintenance or new construction of any farm tenant building unless the tenant house is solely to provide shelter for seasonal labor.

If a farm building (which does not mean the farm house) is damaged or destroyed by fire, flood, tornado, etc., it may be rebuilt or restored provided the cost is less than $5,000 but the state AAA committee must determine that such reconstruction is essential to the agricultural program. In such a case it is recommended that you immediately contact your parish AAA board and ask them to approve such reconstruction and submit it to the state AAA committee.

Construction may be permitted where it is considered necessary to prevent the threatened loss of farm products. But here again the state AAA committee will have to determine if such construction is essential to the agricultural program.

In the case of a farm house damaged or destroyed by fire, flood, etc., after July 1, 1944, the rebuilding will be permitted provided the total cost is less than $5,000. It is recommended that the reconstruction of residences so damaged should secure approval by the War Production Board on form WPB-617. Copies of this form may be had from this office or the New Orleans office of the War Production Board. Have this form filled out and submit to your parish board, who, knowing the circumstances, should immediately approve. It is then sent to the state office of the War Production Board and their approval will carry priorities covering lumber and any other critical material. Lumber ap-

NOTICE OF MEETING

The Louisiana Sugar Planters' Field Day will be held in Baton Rouge, Louisiana on September 19, 1944.

The following schedule has been planned:

Morning Session

Visit to inspect new varieties and rotation work. Experimental equipment for ditching, mole draining, and burning will be exhibited.

Afternoon Session

Meeting of the Louisiana Sugar Cane Technologists' Association—Agricultural Auditorium.

proved on a WPB-617 application will not be deducted from the parish or state quota of lumber.

Farmers' lumber certificates may not be issued for construction of any farm buildings, including the farm house, where the cost exceeds the limitations of L-41; maintenance and repair of farm houses; off-farm construction; maintenance and repair of off-farm buildings; or new wooden fences.

If a farmer gets a certificate from the parish AAA and does not place it with the lumber dealer within 10 days after issuance, the certificate becomes void and it will then be necessary for the parish AAA either to issue a new certificate to the farmer or to cancel the certificate and put the amount of lumber back into the available amount for the parish.

Briefly this will give you a quick summary of what the farmer may and may not do with regard to this farm lumber program:

The Farmer:

A. MAY SECURE LUMBER WITHOUT A CERTIFICATE WHEN:

1. He buys from a sawmill producing less than 100,000 board feet a year.
2. He has logs sawed into lumber at a sawmill producing less than 100,000 board feet a year.
3. He buys from his dealer who has an inventory of free lumber for dwelling maintenance and repair (a limited amount which the War Production Board permits the dealer to sell without ratings or certificates).
4. He purchases a total of less than 300 board feet from all dealers in a calendar quarter.

B. MUST HAVE A CERTIFICATE WHEN:

1. He has logs sawed at a sawmill producing more than 100,000 board feet of lumber per year. (Certificate is required from farmer by the sawmill before lumber cut from farmers' logs may be released.
2. He purchases more than 300 board feet in a calendar quarter.

C. Farmers' Lumber Certificates may be obtained only upon application made on form FL-200 approved by the parish AAA.

D. May purchase lumber from his usual supplier even though the supplier is located in another parish or state.

E. If he does not use his certificate within the time limit he must surrender it to his parish AAA board.

You will note above the status of the tenant houses on the farms and the inability to get certificates to secure lumber for repair or to build such structures. This association and the association of retail lumber dealers through our Washington offices have presented vigorous protest both to the War Food Administration and to the War Production Board. We have set forth the necessity of lumber being made available for necessary maintenance of tenant houses as an essential requirement of the farm production program. From information we have had we believe that our protests are receiving favorable consideration and there is an excellent possibility that by the time our next bulletin is issued we will be able to advise that lumber may be secured from the local lumber dealer upon proper certificate from the AAA office for the necessary work on tenant houses.

Some Comparative Test Field Averages and Results of Important Commercial Canes

By C. B. Gouaux
Louisiana State University
and
Agricultural and Mechanical College
Agricultural Experiment Stations
W. G. Taggart, Director.

Commercial Canes

Variety	Parentage	Year Released
Co. 290	Co. 221 X D-74	1933
C. P. 29-103	P. O. J. 2725 X C. P. 1165	1939
C. P. 29-116	P. O. J. 2725 X C. P. 1165	1936
C. P. 29-120	P. O. J. 2725 X C. P. 1165	1939
C. P. 33-243	Co. 281 X U. S. 1694	1941
C. P. 34-120	Co. 281 X P. O. J. 2878	1942
C. P. 33-310	C. P. 1165 X C. P. 27-108	1943
C. P. 33-425	Co. 281 X U. S. 1694	1943
C. P. 28-11	Co. 281 X U. S. 1694	1934
C. P. 28-19	Co. 281 X U. S. 1694	1934
C. P. 29-320	Co. 281 X C. P. 27-34	1935

Cinclare Test Fields Averages (1939-1943) Yazoo Soil

Variety	Normal Juice			Tons Per Acre
	Brix	Sucrose	Purity	
C. P. 28-19	16.15	12.92	80.00	19.23
C. P. 29-320	15.79	12.86	81.44	20.06
C. P. 29-103	16.71	12.87	77.02	20.49
C. P. 29-120	16.23	13.10	80.71	22.64
C. P. 33-243	15.35	12.42	80.91	22.66

Cinclare Test Fields Averages (1938-1942) Sharkey or "Black Land"

C. P. 28-11	16.08	12.54	77.99	11.71
C. P. 29-116	15.87	12.11	76.26	14.25

Cinclare Test Fields Averages (1942 and 1943) Sharkey or "Black Land"

C. P. 29-116	14.82	11.28	76.11	14.29
C. P. 34-120	15.01	11.63	77.48	16.85
C. P. 33-224	14.51	11.29	77.81	17.94
C. P. 34-21	14.99	11.71	78.12	17.09

Cinclare Test Fields—Averages and Results (Yazoo and Sharkey)

Variety	Normal Juice			Tons Per Acre	Pounds Sugar 96° Test	
	Brix	Sucrose	Purity		Per Ton	Per Acre
Yazoo Soil (1939-1943)						
C. P. 29-120	16.23	13.10	80.71	22.64	178.3	4038
C. P. 33-243	15.35	12.42	80.91	22.66	167.4	3793
C. P. 29-103	16.71	12.87	77.02	20.49	174.6	3578
C. P. 29-320	15.79	12.86	81.44	20.06	174.5	3500
C. P. 28-19	16.15	12.92	80.00	19.23	175.4	3373
Yazoo Soil (1943)						
C. P. 34-120	15.29	12.28	80.31	27.32	165.2	4513
C. P. 29-120	16.01	12.68	79.20	22.01	171.6	3777
Sharkey Soil (1938-1942)						
C. P. 29-116	15.87	12.11	76.31	14.25	162.5	2316
C. P. 28-11	16.08	12.54	77.99	11.71	169.3	1983
Sharkey Soil (1942 and 1943)						
C. P. 33-224*	14.51	11.29	77.81	17.94	149.5	2682
C. P. 34-21*	14.99	11.71	78.12	17.09	156.2	2669
C. P. 34-120	15.01	11.63	77.48	16.85	154.9	2610
C. P. 29-116	14.82	11.28	76.11	14.29	149.4	2136

Notes: (*) Unreleased variety.
C. P. 33-224 (Parentage: C. P. 27-139 X C. P. 31-432)
C. P. 34-21 (Parentage: U. S. 1643 X C. P. 29-284)

Glenwood Test Fields Averages—Yazoo Soil (1939-1943)

Variety	Normal Juice			Tons Per Acre
	Brix	Sucrose	Purity	
C. P. 28-19	16.34	13.16	80.54	17.05
C. P. 29-320	15.44	11.93	77.27	17.20
C. P. 29-103	16.57	12.37	74.65	20.11
C. P. 29-120	15.79	12.43	78.72	20.72
C. P. 33-243	15.11	11.85	78.42	19.00
Yazoo Soil (1942 and 1943)				
C. P. 29-120	15.74	12.36	78.53	21.53
C. P. 34-120	15.93	11.79	74.01	28.09

Glenwood Test Fields—Yazoo Soil (Averages and Results)

Variety	Normal Juice			Tons Per Acre	Pounds Sugar 96° Test	
	Brix	Sucrose	Purity		Per Ton	Per Acre
C. P. 29-120	15.79	12.43	78.72	20.72	167.6	3473
C. P. 29-103	16.57	12.37	74.65	20.11	166.5	3348
C. P. 28-19	16.34	13.16	80.54	17.05	179.3	3057
C. P. 33-243	15.11	11.85	78.42	19.00	158.4	3010
C. P. 29-320	15.44	11.93	77.27	17.20	159.6	2745
(1942 and 1943)						
C. P. 34-120	15.93	11.79	74.01	28.09	157.4	4421
C. P. 29-120	15.74	12.36	78.53	21.53	166.5	3585

Reserve Test Fields Averages—Yazoo Soil (1939-1943)

Variety	Normal Juice			Tons Per Acre
	Brix	Sucrose	Purity	
C. P. 28-19	16.22	12.35	76.14	23.44
C. P. 29-320	15.52	11.44	73.71	21.88
C. P. 29-103	14.88	10.90	73.25	24.45
C. P. 29-120	15.72	11.81	75.13	24.26
C. P. 33-243	15.24	11.47	75.26	24.07

Reserve Test Fields Averages—Yazoo Soil (1942 and 1943)

C. P. 28-19	16.42	12.58	76.61	25.17
C. P. 34-120	15.38	11.30	73.47	33.78

Reserve Test Fields—Yazoo Soil (Averages and Results)

Variety	Normal Juice			Tons Per Acre	Pounds Sugar 96° Test	
	Brix	Sucrose	Purity		Per Ton	Per Acre
Yazoo Soil (1939-1943)						
C. P. 28-19	16.22	12.35	76.14	23.44	166.5	3903
C. P. 29-120	15.72	11.81	75.13	24.26	157.7	3826
C. P. 33-243	15.24	11.47	75.26	24.07	152.4	3668
C. P. 29-103	14.88	10.90	73.25	24.45	143.2	3501
C. P. 29-320	15.52	11.44	73.71	21.88	151.9	3324
Yazoo Soil (1942 and 1943)						
C. P. 34-120	15.38	11.30	73.47	33.78	149.7	5057
C. P. 28-19	16.42	12.58	76.61	25.17	169.7	4271

Meeker Test Fields Averages—Yahola Soil (1939-1943)

Variety	Normal Juice			Tons Per Acre
	Brix	Sucrose	Purity	
C. P. 28-19	16.43	12.78	77.78	23.34
C. P. 29-320	16.01	12.25	76.51	24.28
C. P. 33-243	14.74	11.01	74.69	31.62
C. P. 29-120	14.58	10.60	72.70	28.84

Meeker Test Fields Averages—Yahola Soil (1942 and 1943)

C. P. 33-243	15.68	12.61	80.42	32.48
C. P. 34-120	15.93	12.34	77.46	38.37
C. P. 33-425	17.04	13.70	80.39	25.53

Meeker Test Fields—Yahola Soil (Averages and Results)

Variety	Normal Juice			Tons Per Acre	Pounds Sugar 96° Test	
	Brix	Sucrose	Purity		Per Ton	Per Acre
(1939-1943)						
C. P. 33-243	14.74	11.01	74.69	31.62	145.2	4591
C. P. 28-19	16.43	12.78	77.78	23.34	173.2	4042
C. P. 29-320	16.01	12.25	76.51	24.28	164.7	3999
C. P. 29-120	14.58	10.60	72.70	28.84	137.9	3977
(1942 and 1943)						
C. P. 34-120	15.93	12.34	77.46	38.37	166.1	6373
C. P. 33-243	15.68	12.61	80.42	32.48	170.5	5538
C. P. 33-425	17.04	13.70	80.39	25.53	188.1	4802

Shirley Test Fields Averages—Yahola Soil (1939-1943)

Variety	Normal Juice			Tons Per Acre
	Brix	Sucrose	Purity	
C. P. 28-19	17.21	13.93	80.94	24.57
C. P. 29-320	16.28	12.81	78.69	30.11
C. P. 33-243	15.96	12.80	80.20	29.70
C. P. 29-120	16.11	12.44	77.22	24.71

Shirley Test Fields Averages—Yahola Soil (1942 and 1943)

C. P. 29-320	16.46	13.02	79.10	34.83
C. P. 34-120	16.30	12.57	77.12	39.37
C. P. 33-425	17.67	14.55	82.34	26.53

Shirley Test Fields—Yahola Soil (Averages and Results)

Variety	Normal Juice			Tons Per Acre	Pounds Sugar 96° Test	
	Brix	Sucrose	Purity		Per Ton	Per Acre
(1939-1943)						
C. P. 29-320	16.28	12.81	78.69	30.11	173.7	5230
C. P. 33-243	15.96	12.80	80.20	29.70	173.5	5153
C. P. 28-19	17.21	13.93	80.94	25.57	191.9	4715
C. P. 29-120	16.11	12.44	77.22	24.71	167.7	4144
(1942 and 1943)						
C. P. 34-120	16.30	12.57	77.12	39.37	169.8	6685
C. P. 29-320	16.46	13.02	79.10	34.83	177.0	6165
C. P. 33-425	17.67	14.55	82.34	26.53	202.1	5363

Sterling Test Fields Averages—Sharkey silty clay loam (1938-1942)

Variety	Normal Juice			Tons Per Acre
	Brix	Sucrose	Purity	
Co. 290	16.12	12.74	79.03	26.11
C. P. 29-116	16.44	12.66	77.01	25.52
C. P. 29-103	18.17	14.15	77.88	20.43
C. P. 29-120	17.54	14.22	81.07	22.28

Sterling Test Fields Averages—Sharkey silty clay loam (1942)

Co. 290	16.30	13.16	80.74	23.96
C. P. 34-120	17.09	14.18	82.97	22.39

Sterling Test Fields—Sharkey silty clay loam (Averages and Results)

Variety	Normal Juice			Tons Per Acre	Pounds Sugar 96° Test	
	Brix	Sucrose	Purity		Per Ton	Per Acre
(1938-1942)						
Co. 290	16.12	12.74	79.03	26.11	172.5	4504
C. P. 29-120	17.54	14.22	81.07	22.28	196.6	4380
C. P. 29-116	16.44	12.66	77.01	25.52	171.3	4372
C. P. 29-103	18.17	14.15	77.88	20.43	195.5	3994
(1942)						
C. P. 34-120	17.09	14.18	82.97	22.39	196.0	4388
Co. 290	16.30	13.16	80.74	23.96	179.3	4296

Billeaud Test Fields Averages—Lintonia Soil (1940-1943)

Variety	Normal Juice			Tons Per Acre
	Brix	Sucrose	Purity	
Co. 290	16.03	12.41	77.42	27.87
C. P. 29-116	16.11	12.17	75.54	28.40
C. P. 33-243	16.70	14.06	84.19	24.40
C. P. 33-310	18.57	15.09	81.26	22.89

(1942 and 1943)

C. P. 34-120	17.18	14.20	82.65	25.04
C. P. 33-310	19.02	15.20	79.92	25.92

Billeaud Test Fields—Lintonia Soil (Averages and Results)

Variety	Normal Juice			Tons Per Acre	Pounds Sugar 96° Test	
	Brix	Sucrose	Purity		Per Ton	Per Acre
(1940-1943)						
C. P. 33-310	18.57	15.09	81.26	22.89	211.0	4830
C. P. 33-243	16.70	14.06	84.19	24.40	194.0	4734
Co. 290	16.03	12.41	77.42	27.87	167.3	4663
C. P. 29-116	16.11	12.17	75.54	28.40	163.4	4641
(1942 and 1943)						
C. P. 33-310	19.02	15.29	79.92	25.92	212.8	5516
C. P. 34-120	17.18	14.20	82.65	25.04	196.3	4915

Youngsville Test Fields Averages—Olivier Soil (1941-1943)

Variety	Normal Juice			Tons Per Acre
	Brix	Sucrose	Purity	
Co. 290	15.51	11.92	76.85	31.58
C. P. 29-116	15.65	11.38	72.72	32.76
C. P. 33-310	17.44	13.38	76.72	28.76
C. P. 33-224	15.85	12.06	76.09	27.26
C. P. 34-120	16.70	13.31	79.70	29.01

Youngsville Test Fields—Olivier Soil (Averages and Results)

Variety	Normal Juice			Tons Per Acre	Pounds Sugar 96° Test	
	Brix	Sucrose	Purity		Per Ton	Per Acre
(1941-1943)						
C. P. 34-120	16.70	13.31	79.70	29.01	181.8	5274
C. P. 33-310	17.44	13.38	76.72	28.76	182.9	5260
Co. 290	15.51	11.92	76.85	31.58	159.4	5034
C. P. 29-116	15.65	11.38	72.72	32.76	151.0	4947
C. P. 33-224	15.85	12.06	76.09	27.26	161.7	4408

Notes:
C. P. 33-224 is an unreleased variety. Parentage: C. P. 27-139 X C. P. 31-432.
C. P. 34-21 is an unreleased variety. Parentage: U. S. 1643 X C. P. 29-284.
Plant: Fall Plant Cane.
1 S First Stubble.
2 S Seeond Stubble.

SUMMARY

The comparisons of five commercial varieties for the five-year period of 1939 to 1943 inclusive, consisting of fall plant cane, first and second stubble results on Yazoo soil or "sandy land", indicate that C.P. 29-120 gave the highest sugar per acre yield at Cinclare and Glenwood and ranked second at Re-

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serve; being also higher in sugar per ton yield than C.P. 29-320 at these three alluvial section test fields.

C.P. 29-120 was superior to C.P. 29-103 on Yazoo soil and also in the Teche area on Sharkey silty clay loam.

The variety C.P. 33-243 made the best showing in the Bunkie-Meeker area, where it ranked first and second respectively at Meeker and Shirley. It also performed well at the Billeaud location, where it ranked second and was third ranking variety at Cinclare and Reserve. This cane is extremely susceptible to red rot disease, and plantings should be limited to the well drained light lands in the sections where it has given the best response. Average figures of the three alluvial sections and two Red river test fields show that C.P. 33-243 is 5.5 pounds lower in sugar per ton yield than C.P. 29-320.

The comparative data for the C.P. 34-120 variety consists mostly of the results of the 1942 and 1943 seasons. Average figures show that it ranked first at seven out of the eight test fields; being outranked only by C.P. 33-310 at the Billeaud test field. From a sugar per ton standpoint the averages are as follows:

(1) Alluvial section: 157.4 pounds,
(2) Red river section: 168.0 pounds,
(3) Teche and western area: 191.4 pounds.

The five-year results and averages, 1938 to 1942 inclusive, on Sharkey soil or "black land," at Cinclare, show that C.P. 29-116 made a higher sugar per acre yield than C.P. 28-11. However, the latter gave 6.8 pounds of sugar per ton yield more than C.P. 29-116.

In the two-year comparisons of four varieties on "black land," two unreleased varieties, C.P. 33-224 and C.P. 34-21, ranked first and second respectively; while C.P. 34-120, third ranking variety outclassed C.P. 29-116.

The five-year averages, 1939 to 1943 inclusive, of four varieties in the Red river area, indicate that they ranked as follows from a sugar per acre standpoint: (Meeker): (1) C.P. 33-243; (2) C.P. 28-19; (3) C.P. 29-320; (4) C.P. 29-120. (Shirley): (1) C.P. 29-320; (2) C.P. 33-243; (3) C.P. 28-19; and (4) C.P. 29-120.

C.P. 29-120 was lowest in sugar per ton yield at both of the Red river test fields; being considerably under par at the Meeker location.

In the two-year comparisons of the Meeker and Shirley test fields, C.P. 34-120 was the leading variety; surpassing the highest ranking varieties: C.P. 33-243 at Meeker and C.P. 29-320 at Shirley.

Sterling Test Fields (Sharkey silty clay loam): The results of the five-year comparisons, 1938 to 1942 inclusive, indicate that the varieties ranked in the following order from a sugar per acre standpoint: (1) Co. 290; (2) C.P. 29-120; (3) C.P. 29-116 and (4) C.P. 29-103.

The results of a single season (1942), at Sterling, consisting of the average of fall plant cane and first stubble, show that C.P. 34-120 surpassed Co. 290 in sugar per ton and sugar per acre yields.

Both C.P. 29-120 and C.P. 29-103 greatly exceeded Co. 290 and C.P. 29-116 in sugar per ton yields at the Sterling test fields.

Billeaud Test Fields (Lintonia soil): In the four-variety comparison for the seasons of 1940 to 1943 inclusive, C.P. 33-310 was the leading variety. The figures show that with a five-ton per acre lower field yield, it gave an average of 167 pounds of sugar per acre and 43.7 pounds of sugar per ton more than the standard field cane Co. 290.

C.P. 33-243, the second highest ranking variety at

the Billeaud location, with a 3.47 tons per acre lower field yield, gave 71 pounds of sugar per acre and 26.7 pounds of sugar per ton more than Co. 290.

C.P. 29-116, fourth ranking variety, was slightly higher in average field tonnage, but lower than Co. 290 in sugar per ton and sugar per acre yields.

The comparative results of two varieties for the seasons of 1942 and 1943, indicate that C.P. 33-310 outranked C.P. 34-120 in sugar per acre yield by 601 pounds.

Youngsville Test Fields (Oliver soil): The five-variety comparison for the seasons of 1941 to 1943 inclusive, show that C.P. 34-120 was the leading variety followed by C.P. 33-310.

Co. 290 and C.P. 29-116, standard field canes of the Teche and western area, ranked third and fourth respectively; while the unreleased variety C.P. 33-224 ranked fifth.

Both C.P. 34-120 and C.P. 33-310 were greatly superior to Co. 290 and C.P. 29-116 in sugar per ton yield.

The data presented in this report gives information on the performance of important sugar cane varieties on representative soil types of the sugar cane belt at the eight test fields of the Louisiana Experiment Station. For each test field locality, the results can be used as a basis or guide for the proper selection of commercial canes for the 1944 fall planting season.

Acknowledgments

All of the data in this report are from previous test field reports of the Louisiana Experiment Station.

The results were obtained with the fine cooperation of the following test field cooperators:

Cinclare Central Factory, Cinclare, La.
Godchaux Sugars, Inc., Reserve, La.
Glenwood Cooperative, Inc., and Thibaut Farms, Napoleonville, La.
W. H. Jones and Meeker Sugar Refining Co., Meeker, La.
Haas Investment Co., Bunkie, La.
Sterling Sugars, Inc., Franklin, La.
Geo. Billeaud and Billeaud Sugar Factory, Broussard, La.
R. O. Young, Inc., Youngsville, La.

Official Release

WFA Announces 1945 Sugar Beet and Sugarcane Price Support Program

The War Food Administration has announced a price support program for the 1945 sugar beet crop and for the 1945 Louisiana and Florida sugarcane crops which will assist growers to increase production.

The price support program for the 1945 sugar beet crop will be at least as favorable as the 1944 program, under which growers will average about $12.50 per ton of beets, including payments under the Sugar Act of 1937.

Under the price support program for the 1945 Louisiana sugar cane crop, growers will receive a payment of about $1.60 per ton of sugarcane of the average quality of recent years or $1.53 per ton of standard cane, subject to downward adjustment in case of an advance in the market price of sugar. The 1944 price support program will be adjusted to provide for full payment on frozen cane, used either for sugar or molasses, in order to aid growers in clearing fields promptly and thus insure greater sugar and molasses production in 1944 and succeeding years.

Under the price support program for the 1945 Florida sugarcane crop, growers will receive a basic payment of $1.60 per ton of average sugarcane, the payment to be graduated upward or downward on the basis of the sugar commercially recoverable from the cane and subject to adjustment downward in case of an advance in the market value of sugar. The price support payment will apply on a straight weight basis to frozen sugarcane which can be utilized for either sugar or molasses.

Announcement of the price support programs is made at this time to enable growers to plan for 1945 production, particularly in California where part of the sugar beet crop is fall-planted and where there is a good opportunity for increasing production. Sugar beet growers can make an important contribution to wartime food needs by substantially increasing their sugar beet plantings. Increased sugar production is necessary to meet needs of the armed forces, civilians and allies. The price support programs will help growers to meet wage rates necessary to obtain sufficient workers. It is feared that lowered production of sugarcane in Louisiana and Florida, due to scarcity of labor, may continue unless growers are able to obtain an increased number of workers.

The price support payments, like the payments under the Sugar Act of 1937, are contingent upon an appropriation by the Congress. The Stabilization Extension Act of 1944 authorizes such appropriations.

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TWENTY-SECOND ANNUAL MEETING

of the

AMERICAN SUGAR CANE LEAGUE

of the

U. S. A., Inc.

Thursday, September 28th, 1944

Jackson Room, Mezzanine Floor, St. Charles Hotel
New Orleans, La.
Meeting Convenes at 1:30 P. M.

At this meeting there will be an election of Officers and Members of the Executive Committee to serve during the ensuing year.

All Members of the League Will Please Consider This as an Official Notice To Attend

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In This Issue

Twenty-Second Annual Meeting ..... Cover
Minimum Harvesting Wages for the 1944 Louisiana Sugarcane Crop 214
New Ceiling Prices for Sugar 215
Special Package Sugar 215
Price Support Program 216
Allotments of Sugar 216
Raw Sugar Allotment Order Terminated 216
1944-45 Proportionate Shares for Puerto Rico, Domestic Beet Area, Hawaii and Virgin Islands 217
Trucks 217
Fair and Reasonable Prices for the 1944 Crops of Sugar Beets 218
Higher Price Requested 218
Estimate of Domestic Sugar Production Reduced 219

Minimum Harvesting Wages for the 1944 Louisiana Sugarcane Crop

The War Food Administration has announced minimum harvesting wage requirements for producers of the 1944 Louisiana sugarcane crop who apply for payments under the Sugar Act of 1937. The required rates are the same as for the 1943 season when an increase from a basic wage of $1.85 to $2.70 per day was made following announcement of a price assistance program for such producers.

Two adjustments have been made in the determination which will permit greater utilization of labor during the present shortage. The first provides a special piece rate for certain cane cutting operations which have developed as a result of wartime labor scarcity. The second change will permit the employment of prisoners of war on a piece rate basis without guaranteed equivalent time earnings, an arrangement already effective in the case of cultivation rates.

The Sugar Act requires, among other conditions of payment to growers, that all persons employed on farms in the production of sugarcane be paid in full for such work at rates not less than those determined to be fair and reasonable, after investigation and public hearing. The public hearing was held at Thibodaux, Louisiana, on June 29.

The full wage determination follows:

The requirements of Section 301(b) of the Sugar Act of 1937, as amended, shall be deemed to have met with respect to the harvesting of sugarcane in Louisiana during the period from September 1, 1944, to June 30, 1945, if all persons employed on the farm during that period in the harvesting of sugarcane shall have been paid in full for all such work and shall have been paid wages in cash therefor at rates not less than the following:

(*a*) *Time rates for adult males and adult females*

	Per day of 9 hours	Per hour when working day is longer or shorter than 9 hours
		(cents)
(1) Cutting, topping, stripping		
(i) Adult Males	$2.70	30.0
(ii) Adult Females	2.20	25.0
(2) Loading	3.25	37.0
(3) Cutting and Loading	2.90	33.0
(4) Tractor drivers, and truck drivers	3.40	38.0
(5) Teamsters	3.20	36.0
(6) Hoist operators	2.90	33.0
(7) Any other harvesting operations not connected with mechanical loading or mechanical harvesting		
(i) Adult Males	2.30	26.0
(ii) Adult Females	1.85	21.0
Operations connected with mechanical loading or mechanical harvesting:		
(8) Operators of mechanical loading or harvesting equipment	3.65	41.0
(9) Grabmen, spotters, ropemen	3.25	37.0
(10) Pilers	2.90	33.0
(11) Scrappers	2.70	30.0
(12) Other Operators connected with mechanical loading or mechanical harvesting	2.70	30.0

(*b*) *Time rates for harvesting operations performed by children*

(1) For children between the ages of 14 and 16 years, the rate per day of 8 hours (maximum hours per day for such children) shall be not less than three-fourths of the rates established under paragraph (a) for adult male workers for a 9-hour day, for a working day shorter than 8 hours, the rate shall be in proportion.

(c) *Piece rates for adult males, adult females, or children 14 to 16 years*

For the following operations	Rate per ton: Large barrel varieties such as C.O. 290; C.P. 29-103; C.P. 29-116; 31-291; 160; 103; 33-243	Rate per ton: Small barrel Varieties
(1) Cutting top and bottom and stripping	$1.17	$1.35
(2) Cutting top and bottom	.91	1.00
(3) Loading	.28	.37
(4) (1) & (3) combined	1.45	1.72
(5) (2) & (3) combined	1.19	1.37

(6) The piece rate for a particular operation calculated on a basis other than prescribed under subparagraphs (1) or (2) of this paragraph (c) shall be such as to provide earnings per day, or per hour, of not less than the per day or per hour rates specified under paragraphs (a) or (b) above whichever is applicable: Provided, however, that minimum earnings per hour or per day shall not apply to prisoners of war but they shall be paid at the same piece rate as other laborers.

(d) *General Provisions*

(1) Nothing in this determination shall be construed to mean that a producer may quality for a payment under the Act who has not paid in full the amount agreed upon between the producer and laborer;

(2) The producer shall furnish to the laborer without charge the customary perquisites, such as a habitable house, medical attention, and other customary incidentals;

(3) The producer shall not, through any subterfuge or device whatsoever, reduce the wage rates to laborers below those determined herein.

(Sec. 301, 50 Stat. 909; 7 U. S. C. 1940 ed. 1131; E. O. 9322, 8 F. R. 3807; E. O. 9334, 8 F. R. 5423; E. O. 9392, 8 F. R. 14783)

Issued this 29th day of August, 1944

/S/ Ashley Sellers
Assistant War Food Administrator

New Ceiling Prices for Sugar

Adjustments of ceiling prices for raw sugar and for direct consumption sugar—resulting in a slight but almost negligible over-all increase in f.o.b. prices for direct-consumption sugar—were announced August 31, 1944 by the Office of Price Administration.

The new prices are effective for primary distributors and sellers of raw sugar September 3, 1944.

The changes in maximum prices for primary distributors will be taken into account by OPA District Offices in setting community ceilings. It is likely that there will be a slight reduction at retail in the Northeastern states, and a very slight increase in some other parts of the country.

Following are the prices established today (per hundred pounds, f.o.b. United States seaboard refinery nearest freightwise to the point of delivery):

1. For sales of fine granulated cane sugar refined in the continental United States . . . $5.50 per hundred pounds. This represents a decrease of ten cents per hundred pounds for Northeastern refiners and in increase of five cents per hundred pounds for refiners located in other areas.

2. Similar price adjustments are represented by the establishment of a ceiling of $5.45 per hundred pounds for sales of fine granulated sugar from offshore areas, domestic or foreign, duty paid, and a ceiling of $5.25 per hundred pounds for sales of turbinado, washed-white, or similar sugar from offshore areas, domestic or foreign, for direct consumption.

3. For sales of fine granulated beet sugar processed in the continental United States . . . $5.40 per hundred pounds. This is an increase of five cents per hundred pounds.

4. For sales of direct-consumption sugars other than those already mentioned, processed for United States mainland sugar cane, including but not limited to turbinado plantation white and high-washed sugars . . . $5.40 per hundred pounds.

Another action taken today by OPA establishes a uniform maximum price of 3.75 cents per pound for off-shore raw cane sugar on a c.i.f. (cost, insurance and freight) basis. Former prices, on a cost and freight basis varied in different ports. The cost of raw sugar produced by mainland cane mills was increased from 3.73 cents to 3.75 cents, per pound f.o.b. mill.

Today's uniform prices are possible, OPA said, because the Commodity Credit Corporation, which purchases practically all off-shore raw cane sugar, absorbs part of the transportation, handling, insurance, and other extra war-time costs. The new prices mean a slight decrease in the maximum prices (including insurance) of off-shore sugars delivered at all ports except United States Gulf of Mexico ports, where the ceilings remain the same.

Former f.ob. prices for refined cane sugar were $5.60 per hundred pounds for Northeast refiners and $5.45 per hundred pounds for sugar refined in other parts of the country. The 15-cent differential was put into effect in March 1942 because of a number of conditions which made it impossible for refiners in the Northeastern states to operate without a loss at the $5.45 price.

A recent thorough OPA study of cost and profit data for the industry indicates that the uniform maximum price of $5.50 provided today will make possible for the industry as a whole aggregate returns before taxes which are equal to those earned in the base period (1936, 1937, and 1939).

The increase in beet sugar prices, the agency explained, will tend to compensate for losses arising from a short beet crop. This and other price adjustments will maintain historical price differentials between sales of various types of direct-consumption sugar.

Sales to Army and Navy procurement agencies from refiners located in Louisiana and Texas was also placed on an f.o.b. basis as formerly allowed for refiners along the Atlantic seaboard.

All of today's adjustment in prices were fully discussed with and approved by the Sugar Refiners Industry Advisory Committee.

Special Package Sugar

A price differential for direct-consumption sugar sold by primary distributors in a new special type of package to be used by the United States Army was established by the Office of Price Administration August 25th, 1944.

This differential, which becomes effective August 25, 1944, is $3.40 per 100 pounds. It can be added to the maximum basis prices for sugar already established in the sugar regulation.

The special type of package involved is a natural kraft paper packet containing one and one-fifth ounces net of granulated sugar, packed 500 to a corrugated board container.

Price Support Program

The War Food Administration announced on August 5th, 1944, a price support program for the 1945 sugar beet crop and for the 1945 Louisiana and Florida sugar cane crops which will assist growers to increase production.

The price support program for the 1945 sugar beet crop will be at least as favorable as the 1944 program, under which growers will average about $12.50 per ton of beets, including payments under the Sugar Act of 1937.

Under the price support program for the 1945 Louisiana sugar cane crop growers will receive a payment of about $1.60 per ton of sugarcane of the average quality of recent years, or $1.53 per ton of standard cane, subject to downward adjustment in case of an advance in the market price of sugar. The 1944 price support program will be adjusted to provide for full payment on frozen cane, used either for sugar or molasses, in order to aid growers in clearing fields promptly and thus insure greater sugar and molasses production in 1944 and succeeding years.

Under the price support program for the 1945 Florida sugarcane crop growers will receive a basic payment of $1.60 per ton of average sugarcane, the payment to be graduated upward or downward on the basis of the sugar commercially recoverable from the cane and subject to adjustment downward in case of an advance in the market value of sugar. The price support payment will apply on a straight weight basis to frozen sugarcane which can be utilized for either sugar or molasses.

Announcement for the price support programs is made at this time to enable growers to plan for 1945 production, particularly in California where part of the sugar beet crop is fall-planted and where there is a good opportunity for increasing production. Sugar beet growers can make an important contribution to wartime food needs by substantially increasing their sugar beet plantings. Increased sugar production is necessary to meet needs of the armed forces, civilians, and allies. The price support programs will help growers to meet wage rates necessary to obtain sufficient workers. It is feared that lowered production of sugarcane in Louisiana and Florida, due to scarcity of labor, may continue unless growers are able to obtain an increased number of workers.

The price support payments, like the payments under the Sugar Act of 1937, are contingent upon an appropriation by the Congress. The Stabilization Extension Act of 1944 authorizes such appropriations.

NOTICE OF MEETING

The Louisiana Sugar Planters' Field Day will be held in Baton Rouge, Louisiana on September 19, 1944.

The following schedule has been planned:

Morning Session

Visit to inspect new varieties and rotation work. Experimental equipment for ditching, mole draining, and burning will be exhibited.

Afternoon Session

Meeting of the Louisiana Sugar Cane Technologists' Association—Agricultural Auditorium.

Allotments of Sugar

Allotments of sugar to industrial users for the fourth-quarter beginning October 1, 1944, will be based on the same percentages of base period use as those used during the third quarter, the Office of Price Administration announced September 1, 1944. They are:

1. For all industrial users except drug manufacturers, 80 per cent of the sugar the user consumed in the corresponding 1941 months.

2. For makers of drug and pharmaceutical products, 125 per cent of base period use.

The industrial users for whom the 80 per cent figure is continued include makers of bread and bakery products, breakfast cereals, ice cream and allied products, condensed milk in containers of one gallon or less, soft drinks, mayonnaise and salad dressing, candy, cocoa, chewing gum, certain canned and bottled foods, and users of sugar in experimental, educational, demonstration and testing work.

No amendment to Revised Ration Order 3—Sugar—is necessary in connection with continuance of present allotment figure percentage for fourth quarter use, OPA said.

Raw Sugar Allotment Order Terminated

The War Food Administration has announced termination of War Food Order 7.1 which established raw sugar allotments for cane sugar refiners in continental United States. Termination became effective at 12:01 a. m., (E. W. T.), August 17, 1944.

This order supplemented War Food Order 7 which restricts the purchase, importation or acceptance of raw sugar to refiners in order to assure the continued movement of such sugar into normal distribution channels. WFO 7 continues in effect.

The allotment of raw sugar supplies was instituted by joint action of the War Production Board and War Food Administration early in 1942.

The step was deemed necessary because of the severe curtailment of raw sugar supplies, chiefly as a result of the loss of Philippine sugar and the threat to ocean shipping from other areas. The allotment permitted an equitable distribution of the limited supplies among refiners. Arrivals of raw sugar from offshore areas have increased substantially since 1942 as a result of expanded Cuban sugar production and the improved shipping situation.

While War Food Order 7.1 has been terminated, the War Food Administration says it will endeavor to direct the movement of raw sugar supplies so as to maintain, as far as practicable, the historical relation between the volume of meltings of the various refiners. War Food Order 7 specifies that the purchase, importation or acceptance of raw sugar by refiners must be specifically authorized by the War Food Administration.

Text of the order terminating WFO 7.1 follows:

"War Food Order No. 7.1, as amended (9 F. R. 6801), is hereby terminated.

"This order shall become effective at 12:01 a. m., (E. W. T.), August 17, 1944. With respect to violations, rights accrued, liabilities incurred, or appeals taken, prior to said date, under War Food Order No. 7.1, as amended, all provisions of said order shall be deemed to remain in full force for the purpose of sustaining any proper suit, action, or other proceed-

ing with respect to any such violation, right, liability, or appeal.

(E. O. 9280, 7 F. R. 10179; E. O. 9322, 8 F. R. 3807; E. O. 9334, 8 F. R. 5423; E. O. 9392, 8 F. R. 14783; WFO 7, 8 F. R. 10605, 9 F. R. 4319)

"Issued this 12th day of August 1944."

(signed) C. W. Kitchen,
Acting Director of Distribution

Determination of Proportionate Shares for Sugarcane Farms for the Crop Year 1944-45

(1) Puerto Rico

Pursuant to the provisions of section 302 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Proportionate shares for sugarcane farms in Puerto Rico for the 1944-1945 crop—(a) *Farm proportionate share.* The proportionate share for each farm in Puerto Rico for the 1944-45 crop shall be the amount of sugar, raw value, commercially recoverable from sugarcane grown on such farm and marketed (or processed by the producer) for the extraction of sugar during the 1944-45 crop season.

This determination supersedes the "Determination of Proportionate Shares for Sugarcane Farms in Puerto Rico, Pursuant to the Sugar Act of 1937, as Amended," issued December 31, 1942, insofar as that determination related to proportionate shares for the 1944-45 crop.

Issued at Washington, D. C., this 3d day of August 1944.

Ashley Sellers,
Assistant War Food Administrator.

(2) Domestic Beet Area

Pursuant to the provision of section 302 (a) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Determination of proportionate shares for farms in the domestic beet sugar area for the 1944 crop. The proportionate share for the 1944 crop for each farm in the domestic beet sugar area shall be the number of acres of sugar beets planted thereon for the production of sugar beets to be marketed (or processed by the producer) for the extraction of sugar or liquid sugar during the 1944 crop season.

Issued at Washington, D. C., this 3d day of August 1944.

Ashley Sellers,
Assistant War Food Administrator.

(3) Territory of Hawaii

Pursuant to the provisions of section 302 (a) of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Proportionate shares for sugarcane farms in the Territory of Hawaii for the 1945 crop—(a) *Farm proportionate share.* The proportionate share for each farm in the Territory of Hawaii for the 1945 crop shall be the amount of sugar, raw value, commercially recoverable from sugarcane grown on such farm and marketed (or processed by the producer) for the extraction of sugar during the calendar year 1945.

(b) *Adherent planter protection.* The provisions of this determination shall be subject to the following conditions:

(1) That no changes in the planter-plantation sugarcane and sugar production relationship shall have been made, and

(2) That no reduction in the number of planters shall have been made under programs carried out pursuant to the Act, except such as are considered justified and are approved by the Chief of the Sugar Branch, Office of Distribution, and the Chief of the Agricultural Adjustment Agency, acting either jointly or severally.

Issued at Washington, D. C., this 3d day of August 1944.

Ashley Sellers,
Assistant War Food Administrator.

(4) Virgin Islands

Pursuant to the provisions of section 302 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Proportionate shares for sugarcane farms in the Virgin Islands for the 1945 crop—(a) *Farm proportionate share.* The proportionate share for each sugarcane farm in the Virgin Islands for the 1945 crop shall be the amount of sugar, raw value, commercially recoverable from sugarcane grown on the farm and marketed (or processed by the producer) for the the extraction of sugar during the 1945 crop.

(b) *Tenant and sharecropper protection.* The provisions of this determination are subject to the following conditions:

(1) That no change shall have been made in the leasing or cropping agreements for the purpose of, or which shall have the effect of, diverting to any producer, any payments to which tenants or sharecroppers would be entitled if the 1943-44 leasing or cropping agreements were in effect.

(2) That there shall have been no interference by any producer with contracts entered into by tenants or sharecroppers for the sale of their sugarcane.

(c) *Designation of agent.* The Chief, or the Acting Chief, of the Sugar Branch of the Office of Distribution, and the Officer in Charge of the San Juan Office of the Agricultural Adjustment Agency, or the Acting Officer in Charge thereof, are hereby designated to act, jointly or severally, as agents of the War Food Administrator in administering the provisions of this determination.

Issued at Washington, D. C., this 3d day of August 1944.

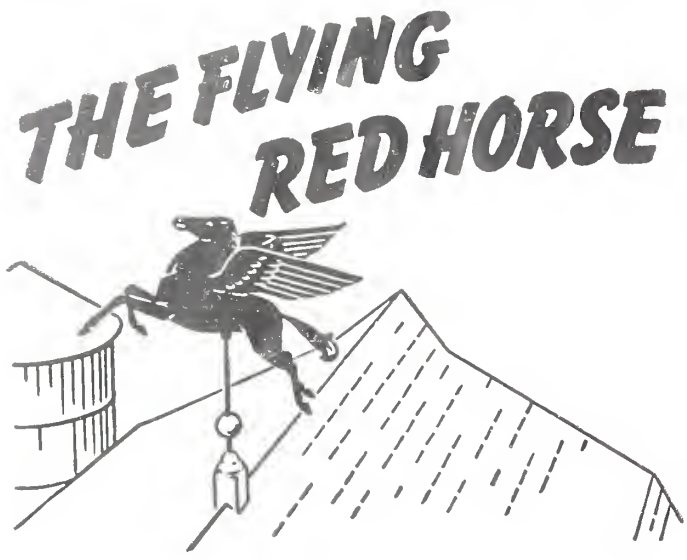
Ashley Sellers,
Assistant War Food Administrator.

Trucks

The United States Treasury Department has released information that 3,000 Army trucks will be offered for sale by the Treasury Department, Procurement Division, Regional Headquarters, Fort Worth, Texas.

This region comprises the States of Louisiana, Texas, Oklahoma and Arkansas.

Any person interested in obtaining a truck should communicate direct with the Regional Headquarters, Fort Worth, Texas.



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Fair and Reasonable Prices for the 1944 Crop of Sugar Beets

Pursuant to the provisions of subsection (d) of section 301 of the Sugar Act of 1937, as amended, and Executive Order No. 9322, issued March 26, 1943, as amended by Executive Order No. 9334, issued April 19, 1943, the following determination is hereby issued:

Fair and reasonable prices for the 1944 crop of sugar beets. The requirements of subsection (d) of section 301 of the Sugar Act of 1937, as amended, shall be deemed to have been fulfilled with respect to the 1944 crop of sugar beets if the producer on the farm shall have paid rates for all sugar beets processed by him equal to those provided in the purchase agreement heretofore made with respect to such crop.

Issued this 6th day of July 1944.

ASHLEY SELLERS,
Assistant War Food Administrator.

Higher Price Requested

BE IT RESOLVED: By the Executive Committee of the American Sugar Cane League that an advance in the market price level of raw and direct-consumption sugar of all grades is urgently needed in order that this essential commodity may be profitably produced in the United States and the expansion of the domestic industry encouraged, and be it further

RESOLVED: That the American Sugar Cane League now emphatically declares that any increase in revenue that may be granted to producers of cane sugar in any overseas area supplying the United States market must, in ordinary justice, be allowed in like measure and in realizable form to the sugar producers in the United States, and be it further

RESOLVED: That the attention of all concerned in the fixing and promulgating of such increase in revenue to any sugar producing area, overseas or mainland, is directed to the importance of a careful regard for the fact that the selling season for the crop of Louisiana produced sugar of all grades and classifications begins during the month of October each year and that if any such increase in revenue shall be allowed, it must of necessity and in fairness be announced in time for the Louisiana sugar producers to derive benefit from it on all and not on just a part of their production, and be it further

RESOLVED: That copies of this Resolution be sent to the War Food Administrator, to the Price Control Administrator, to the Senators and Representatives from Louisiana in the Congress of the United States, and to Mr. Clarence J. Bourg, representative of the American Sugar Cane League in Washington, D. C.

The above resolution will be recognized as very timely in view of the immediate approach of the grinding season in Louisiana and the negotiations now going on in Washington with respect to the purchasing of the 1945 Cuban sugar crop.

Reports which find their way into public print leave slightly confused the ordinary person engaged in the domestic production of sugar. Reliable sources of information indicate that the U. S. Government is offering to buy Cuban sugar and molasses at the same basic prices as were paid on the 1944 crop. It has been openly stated by persons who assume to

speak for Cuba that a price of 3.40c per pound of raw sugar is being asked by the Cuban negotiators. None believe that the United States will pay 3.40c or that the Cubans will accept 2.65c.

The disquieting rumors, from the standpoint of domestic producers, speak of compromises and concessions. There is talk of the Cubans being allowed substantial subsidies on foods which they buy from the United States. The plan would be for a U. S. Government agency to sell foods for export to Cuba at a price less than the market price paid by American consumers.

There have been persistent suggestions from Cuban sources that the U. S. should be willing to exempt Cuban sugar imports from tariff duties. This idea proceeds from the fact that the sugar purchased in Cuba is imported without the actual payment of tariff duties because it belongs to the Commodity Credit Corporation who are permitted by the United States Treasury under Executive Order to withhold the amount that would be charged as tariff on ordinary imports. Presently, the Commodity Credit Corporation collects this amount by adding it to the price of sugar sold to the refiners.

The approaching end of the war has forced sugar producers to analyze the present situation. The price of sugar has been kept at a level so low that the production of sugarcane and sugar beets in the United States has become completely dependent upon the incentive payments offered by the War Food Administration; but these incentives have been made available exclusively to growers and the processors have been reduced to so slight a margin that their operations now depend upon the revenue from molasses to avoid processing losses. In a business sense, this is a precarious condition without substantial foundation for the present and without supporting hope for the future. Obviously, the market price for sugar must be advanced, and if it is advanced for a foreign area, who will justify withholding a similar and realizable advance from domestic producers?

(Signed) *C. J. Bourg.*

Estimate of Domestic Sugar Production Reduced

The last estimate of the overall production of sugar in the continental United States issued by the U. S. Department of Agriculture on September 1st, shows a reduction in prospect for the combined cane and beet crops. Unfavorable weather in the Rocky Mountain states and in some parts of the North Central beet producing areas has been credited by the Department for a reduction in the estimated 1944 sugar beet production to 7,204,000 tons of beets. The estimated production is still about 10 per cent larger than the 1943 beet production but is about 29 per cent under the ten-year average production of the sugar beet states. It is noted that the number of acres planted in beets this season is about 9 per cent larger than the 1943 crop used but that the overall acreage devoted to beet production is some 30 per cent smaller than the 1933-43 ten-year average.

The Department of Agriculture has made no change in the estimated Continental sugarcane production which remains at 6,166,000 short tons. Louisiana is expected to produce about 5,206,000 tons of sugarcane and Florida's production is estimated at 960,000 short tons of sugarcane.

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